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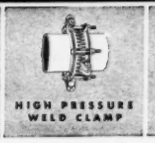

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GAS

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Seventeenth Year of Publication

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GUEST Editorial

If Winter Comes . . . .

By R. J. RUTHERFORD Vice President, Worcester Gas Light Co., Worcester, Mass.

"CAN Spring be far behind"—so goes an old poem. This thought has caused books to be written, much conversation to flow and comparisons to be drawn. One of these latter speaks of War as "Winter" and the peace to come as "Spring." In this light it would seem the Gas Industry has some concern.

It is quite easy, in these "Winter" days of priorities, shortages and general abnormal conditions, to get "paralysis by analysis." But shouldn't we, as an industry, think too of "Spring." What policies can be formulated and are being discussed for our industry?

It was with real genuine pride that the writer left a recent conference of executives of our industry. Undoubtedly, we as an industry aren't being paralyzed by what we have analyzed.

A stated action insisted that, even with material shortages and equipment difficult to obtain, we should continue even more than ever to promote gas service.

The national advertising program, it was felt, should be even stronger and more comprehensive.

Never has more enthusiasm been shown and support given, to expanding research for our industry.

Manufacturers and Utility men alike felt that now was the time to attack a new field—the field of air conditioning.

Development of new equipment was advocated and steps taken to accomplish this objective.

There is precedent for such forward looking action. A recent issue of *Fortune* contained at least two full page advertisements of airplane manufacturers. If any industry was deluged with business and could be complacent, certainly the aviation industry might well be. It is apparent, however, that they are looking ahead and are intent on holding the gains made.

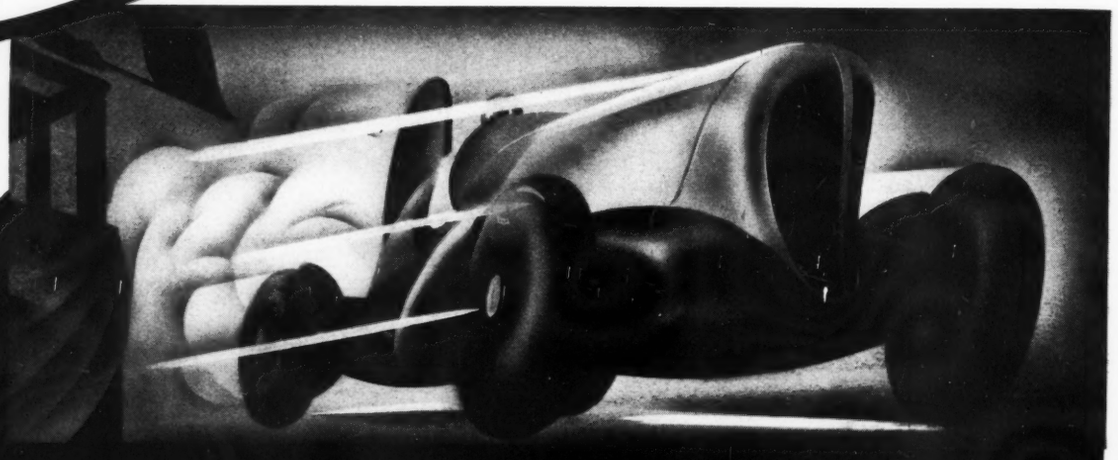
Mr. Rutherford is serving this year as chairman of the Residential Section, American Gas Association.

So have we, as a progressive industry, equal opportunities and obligations.

Opportunities to build and consolidate our position—obligations to ourselves and to our customers to render more complete, continuing and economical service.

To paraphrase—"When Spring comes let's be far ahead."

FIRST IN THE FIELD



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THERMALLY *Thinking*

Chattanooga Looks Ahead

PAGE one news in a recent edition of the Chattanooga *Evening Times*, with an eight-column head over the story, was to the effect that consumers on the lines of the Chattanooga Gas Co. will save from 20% to 38% on their gas bills as a result of a new schedule of domestic gas rates presented to and approved by the state regulatory body.

Despite the fact that Chattanooga is served with manufactured gas, the new rates will give residents of that city one of the country's lowest domestic rates.

The Chattanooga Gas Co. has been trying for years to bring natural gas into the city. And while the Federal Power Commission and the Tennessee Railroad and Public Utility Commission are deliberating whether or not this city should be considered in one market area or another, the competitive situation has become progressively worse.

Confident that red tape will one day be cut and Chattanooga introduced to the convenience and economy of natural gas, the utility has taken this means of safeguarding its existing load and creating a backlog of increased consumer good will that such a voluntary reduction in rates inevitably produces.

It is a system that we recommend as infinitely preferable to fighting tooth and nail against a rate reduction, only to have the state utilities control authorities grant it anyhow.

Build Up to a Standard

THE shortage of materials needed in making stoves and other gas appliances is no longer a matter of academic discussion to many manufacturers who find themselves confronted with serious curtailment of output as the present rapidly diminishing stock piles are exhausted.

One gas company undertook an analysis of the priority metals and materials going into the ranges it sells and found that 11 such items go into the construction of a gas range, whereas 17 items are necessary in electric range construction.

Under these conditions it is only reasonable to assume that the trend will be away from electric cookery, not only in the interests of conserving essential materials, but because the manufacturers, confronted with growing shortages will find it inadvisable to carry on the wholesale promotion and propaganda campaigns without which electricity for cooking cannot be sold to the public.

It would be suicidal for the gas appliance industry to relax any of its own modest promotion on the theory that the field would one day be left uncontested. But changing conditions, brought about by increased purchasing power for consumer goods, on the one hand, and a curtailment of the flow of such goods on the other, may well require a shifting of emphasis on the type of merchandise to be most profitably handled.

During the prolonged period of depression starting with 1929, manufacturers found it necessary to adapt their lines to fit a market that was characterized by low or restricted buying power. Prices fell off and many of the so-called quality lines were supplemented by low priced competitive models.

Experience has proven that there was and remains a definite market for merchandise designed to fit the demands of the low income groups. But if there is to be a scarcity of metals for the construction of appliances, it will become obligatory on the manufacturers of those appliances to use their stocks in the most effective way possible.

We believe in this connection that emphasis should be placed more and more on quality merchandise, selling at a price that quality merchandise should command. This is not an appeal for any more gadgetry, as gadgetry has just about outlived its economic usefulness anyway. It is rather an appeal for merchandise built up to a standard rather than down to a price.

Such emphasis would result in the long run in a better profit for the manufacturers, dealers and salesmen, even though the number of new units sold might tend to diminish. And to the gas utilities the net result should be better appliances on the line, giving more satisfactory performance with fewer service calls per meter.

It is well to remember that all industry has been first appealed to and now warned that it must fall into step with defense preparations. Those industries which do so most readily of their own accord will be the ones that will stand the best chance of avoiding complete regimentation during the grim period that lies ahead.

An Opportunity to Serve

IN a letter to the President of the United States, Major T. J. Strickler, president of the American Gas Association, on June 2, pledged the full support of the gas industry to the government in the defense emergency.

A reply to Major Strickler's office was made by Mayor F. H. LaGuardia, U. S. Director of Civilian Defense. To quote from Mayor LaGuardia's letter:

"I have forwarded a copy of your letter to Mr. Leland Olds, Chairman of the Federal Power Commission for attention to your offer to place the resources of this important industry at the disposal of the Government in the defense program."

The record of the gas industry during former periods of national emergency speaks for itself. The part that the gas industry has already played in the present emergency is being recorded day by day by the capable men in all capacities in every company throughout the country. As Paul B. McKee, president of the Portland Gas and Coke Co., said in a recent address: "The gas industry's opportunity for service begins at home and what each of us does in our own sphere of activity in our own community and with our own company will add up to a sum total of national accomplishment."

More Than 5000 Copies This Issue

The Institute of Gas Technology

THE Institute of Gas Technology will become a reality by September of 1941. And the Illinois Institute of Technology, as a result of an extensive survey conducted among the leading colleges and universities of the United States, has been selected to be the site, and its staff and administrative officers, the administrators of the projected Institute. The new Institute of Gas Technology will be located on the present campus of Illinois Tech in Chicago and will involve an expenditure of more than $1,000,000, exclusive of necessary additions to plant and existing equipment.

This new program will provide for the creation of a separate unit at Illinois Tech, for the the purpose of conducting primarily a comprehensive program of graduate instruction leading to the Master of Science and Doctor of Philosophy degrees. There will also be conducted and encouraged under this graduate program of instruction, fundamental and applied research pointed towards the betterment of the future of the gas industry.

Supporting Companies

At present 17 gas companies are members of the organization group. The decision to create the Institute of Gas Technology at Illinois Tech came as a result of two years of investigation on the part of the gas industry's Research Institute Organization Group, headed by Frank C. Smith, president of Houston (Texas) Natural Gas Co.

The administration of the "Institute of Gas Technology" will be vested in a board of trustees made up of representatives of the gas industry and trustees of Illinois Tech. At a meeting in New York late in June the following officers were elected: For chairman of the Board of Trustees, Frank C. Smith, president of the Houston Natural Gas Co (Texas); for president of the Gas Institute, H. T. Heald, president of Illinois Institute of Technology. For members of the executive committee, in addition to the chairman and president, the following: Herman Russell, president, Rochester Gas and Electric Corp. (New York); F. H. Lerch, Jr., president, Gas Companies, Inc., New York; Frank H. Adams, vice-president, Surface Combustion Corp., Toledo, Ohio; Thomas Drever, president, American Steel Foundries, Chicago, and member of the Board of Trustees of Illinois Tech; and Wilfred Sykes, president of Inland Steel, Chicago, and member of the Board of Trustees of Illinois Tech.

Members of the initial Board of Trustees of the Institute of Gas Technology, elected to serve for the first year (including officers and the executive committee), are: Frank H. Adams, president, Surface Combustion Corp.; F. M. Banks, vice president, Southern California Gas Co.; Walter C. Beckjord, vice president, Columbia Gas and Electric Corp.; H. R. Cook, Jr., vice president, Consolidated Gas Electric Light and Power Co., of Baltimore; P. M. Downing, vice president, Pacific Gas and Electric Co.; Thomas Drever, president, American Steel Foundries; E. M. Farnsworth, president, Boston Consolidated Gas Co.; R. B. Harper, vice president, Peoples Gas Light and Coke Co.; George S. Hawley, president, Bridgeport Gas Light Co.; Dr. Henry T. Heald, president, Illinois Institute of Technology; W. Alton Jones, president, Cities Service Co.; Alfred Kauffmann, president, Link-Belt Co.; Frank H. Lerch, Jr., president, Gas Companies, Inc.; N. C. McGowen, president, United Gas Pipe Line Co.; Clifford Paige, president, Brooklyn Union Gas Co.; Herman Russell, president, Rochester Gas and Electric Corp.; Louis Ruthenburg, president, Servel, Inc.; Frank C. Smith, president, Houston Natural Gas Corp.; Marcy L. Sperry, president, Washington Gas Light Co.; and Wilfred Sykes, president, Inland Steel Co.

FRANK C. SMITH

"Initial financing will provide funds for operating and maintenance expenses in the amount of at least $100,000 per year for a period of 10 years," said President Heald. "These expenses will include instructional costs and regular maintenance costs," he added.

Additional provision will be made for funds to erect the necessary buildings to house the instructional and research activities under this program.

Actual operation is scheduled to begin September, 1941, concurrent with the opening of Illinois Institute of Technology for the regular academic year of 1941-42. From five to 10 fellowships will be granted students for the first year of operation. The program, however, when in complete operation, contemplates a student body of graduate level of from 50 to 60 students with a well qualified faculty chosen for their competence in research and graduate instruction.

Buildings Planned

Plans for the "Gas Institute" include the erection of buildings to house its activities. These buildings will be in addition to the new structures planned by Illinois Institute of Technology under its current expansion program.

F. H. Lerch, Jr., president of the Gas Companies, Inc., of New York and chairman of the committee on university affiliation of the gas companies, confirmed the announcement of plans to create the new Institute. Mr. Lerch also formally announced selection of Illinois Institute of Technology from the group of colleges and universities in the United States under investigation as to capability to handle the project.

In making announcement of the selection of Illinois Institute of Technology as the sponsor of the new project, Mr. Lerch said:

"Illinois Institute of Technology impressed the gas industries' committee by its willingness and excellent ability to cooperate in this project. The 'Gas Institute' will have as its primary objective the training of man power specifically for the gas industry. Trained exclusively on the graduate level, these men will have the benefit of the highly respected graduate school now in existence at the Institute.

"The scope of the curriculum, the excellence of its faculty, the character

of the fundamental research to be undertaken for the degree, will be designed to make available the highest type of scientifically trained personnel and to broaden the scientific knowledge applicable to the solution of the problems of one of the nation's most important industries."

"Such an institution as the 'Gas Institute'," said President Heald, "must necessarily have the highest standards. This will necessitate a carefully selected student body and faculty."

Six principle objectives have been laid down to form the basis of operation of the "Gas Institute." First of all the founders of the new Institute expect it to be operated to "train qualified young men, college graduates, for entrance as valuable employees to the gas industries. The other five objectives are: conduct fundamental research; conduct applied research; collect and distribute scientific information pertaining to gas research, development, investigation, and processes; as a central organization to stimulate research throughout the gas industry; and, as a central organization to coordinate research in the gas industry.

Upon completion of four years of study, the student under this program would receive the degree of Doctor of Philosophy, awarded by Illinois Institute of Technology.

The course of study, which requires college graduation for admission, would include three years of academic training based upon the fundamental sciences and fundamental research. The fundamental science studies include organic chemistry; engineering mathematics; physics; fluid flow and heat transfer; physical chemistry; gas technology; chemistry of polymerization and depolymerization; and catalysis and surface chemistry.

The curriculum also includes the equivalent of one year of academic work designed to give the background of the gas industry, including operation, management and regulations of public utilities; equipment and materials for the manufacture, storage and distribution of gas; by-products of the gas industry; management problems of the gas industry; and other related subject matter.

The fourth year of the student's training will basically consist of research of a fundamental nature of interest to the gas industry. In addition, the student shall be expected to have spent summers of work in some phase of the gas industry.

Our Responsibility Begins at Home

By PAUL B. McKEE

President, Portland Gas & Coke Co., Portland, Oregon*

THERE are people in this country who seem to think that for some mysterious reason there will always be a United States, no matter what they do or how they act. The politicians of France had that belief and sat complacently playing their petty politics behind the Maginot Line while their conqueror was busy building for their destruction. Many people in this country are today flirting with the destiny of our country. Fortunately, we of the gas industry, from the office boy up, are not of that ilk. We recognize that our first duty is to help our chosen leaders make this country ready for the greatest struggle of its history.

P. B. McKEE

In my opinion, the great opportunity of the gas industry and in fact, of the utility industry generally, and beyond that of all business and businessmen is the opportunity to set the example of broadminded effort in the interest of the whole community. This is a country of tremendous area, of large population, of complex social and political and economic problems. Each of us cannot expect to solve all of these problems, but as charity begins at home, so does our opportunity for service begin at home, and what each of us does in our own sphere of activity in our own community and with our own company will add up to a sum total of national accomplishment that will have an effect on national trends.

Obviously, our first job is to render service. We must maintain the physical properties of our companies in first-class operating condition. This will not be easy. Material priorities are now in effect with respect to every piece of steel, every pound of cement, and every bolt and screw and nut which we need to purchase. Recently I sat in the office of the Priorities Division of the O.P.M. in Washington and heard many discussions as to how to establish a priority system, not only with respect to plant extensions but with respect also to materials needed for essential maintenance. This problem has not yet been solved, but judging from the splendid and businesslike approach which the Office of Production Management is taking in regard to all problems of this nature, I have no doubt that they will be solved.

We must maintain the morale of our organizations in the face of increasing excitement and uncertainty. The job of handling an organization to carry on routine service work will not be easy in the present atmosphere. We must exert all proper efforts to convince our people that the work they are doing is essential and must be carried on, no matter how humdrum it may seem to them at the moment. No matter what sacrifice or how much work it may require, it must never be said of the gas industry that a single essential application for service has not been met promptly. In fact, it will no doubt become our responsibility to assume burdens of service which are now being cared for otherwise. This is not only a responsibility but also an opportunity. If we deal with this matter unselfishly and with a broadminded point of view, many customers now using other services will remain with us at the end of the emergency because they will find that our gas service is the best service, in spite of any propaganda to the contrary.

Next, we must keep our companies solvent. Each of us is faced with a substantial payroll that must be met at least twice a month. Each of our companies is carrying a large and ever-increasing burden of taxation. Within the next year or so, this tax burden will no doubt be greatly increased. Funds

*Excerpts from an address delivered before the Northwest Conference of the Pacific Coast Gas Association, Portland, Ore., June 9, 1941.

collected by local, state and Federal governments from individuals and companies are the lifeblood of our national effort for the defense of democracy. We may not enjoy the idea of having to work harder and harder to pay more and more taxes but nevertheless, we must do it. Our government cannot exist in normal times without revenue from taxation; in a time of national emergency, it is essential that the tax income of the government and its sub-divisions be maintained. We have the right to ask that the government use this tax money judiciously and that non-essential government activities be curtailed just as we shall have to economize in order that we may be able to meet our tax burden.

We must use our intelligence and the day and night working hours which are available to us to earn or save enough income to pay a reasonable return upon the capital which has been entrusted to us. We of the utility business cannot benefit from any possible war profits. In peace and war we are obligated to limit our earnings to a modest and fair return upon the capital invested; but it is essential that we earn a fair return. As it is essential to us as individuals and to our companies, so it is also essential in the interest of national defense. Our war effort demands that we maintain our home economy on a sound basis. Without that, we would be faced with internal collapse and a country in a state of collapse cannot support a substantial military program.

A successful company and a successful industry doing its job in 100% fashion contributes to a maximum extent to the national effort and to the national morale. The poorly operated company or one in financial difficulties which must be, for one reason or another, bailed out by the government is a burden rather than an asset to this all-out effort for national defense.

In discussing these matters specifically, one must fall back on his own experience and his own detailed knowledge. Therefore, I use our own company as an illustration of what I have in mind.

We Can Build Morale

We believe that a public utility company like ours can build morale and good feeling in the community through careful attention to detail. It seems to me that is more important under present emergency conditions than it has ever been. In discussing this matter of public relations, I have tried to make it clear that good public relations depend not upon some high priced public relations expert but upon the manner in which each individual member of the organization carries out his or her particular function. It is not a back slapping, loud talking type of effort but one which requires of each service man, of each collector, of each accountant, and especially the executive officers, a proper attention to service detail.

It seems to me that today more than ever is this important. Picture in your mind for the moment a family living in a state of uncertainty for one reason or another. Perhaps, a boy away in the army or someone sick in the household. A meter reader or a collector comes along, does his job with intelligence and interest and human understanding and perhaps that family has received a by-product of its gas service through a word of encouragement from one of our people.

Many men in the industry are aware of the very severe competition with which our company has been and is faced. Yet, Mr. John J. Winn, our commercial manager, and his associates, with the help of our manufacturer and dealer friends and with the help of the great program of national advertising, have been able to meet that competition face to face and head on. We must give thanks that we live in a country where sales effort is accepted as a proper effort in this time of emergency and where continued work to sell a necessary service or product or idea is a patriotic privilege and duty.

A Company Motto

We have a motto in our company and every member of the organization is urged to think along the lines set forth in this motto. It is to turn every possible liability into an asset and in line with that thinking, E. L. Hall, our vice president and chief engineer, and his associates have worked and slaved day and night for the past several years to find ways and means to produce additional by-products, which in turn would supply us with additional revenue, which in turn would enable as to meet any tax free, government subsidized competition with which we might be faced.

Dealing as we do in the gas industry with combinations of carbon and hydrogen atoms, these developments will place our company in the front rank of producers of national defense material. After all, toluol, the last T in TNT, is nothing but a hook-up of carbon and hydrogen atoms. As most of you know, toluol now comes out of our gas as a by-product and more will be produced when our new plant now under construction is completed. Carbon extracted as a by-product in the form of petroleum coke is one of the essential ingredients in the manufacture of the important metal, aluminum. And so we are geared to national defense, not only because we supply an essential domestic service, "Keeping the home fires burning with a clear blue flame," as it were, and keeping important industries supplied with heat for necessary manufacturing, but also because the by-products of our gas business include coke and toluol and benzol and other war essentials.

The Consumer Aids Defense

So each time a domestic customer cooks a meal or heats her home, she has made it possible for us to produce increased amounts of these defense materials, and interestingly enough, the raw material from which both our gas and by-products come is a heavy oil from which all the ingredients useful to the oil refiner have been extracted. This is a long and interesting story and I should like to talk to you about it all afternoon but I have not spoken of it for the purpose of impressing you with our diligence or our engineering ability but merely to illustrate my belief that there are many undiscovered opportunities in this industry and to urge that each of us look for those undiscovered opportunities not only for the purpose of improving the service and earning capacities of our companies but also to be helpful in the national defense effort.

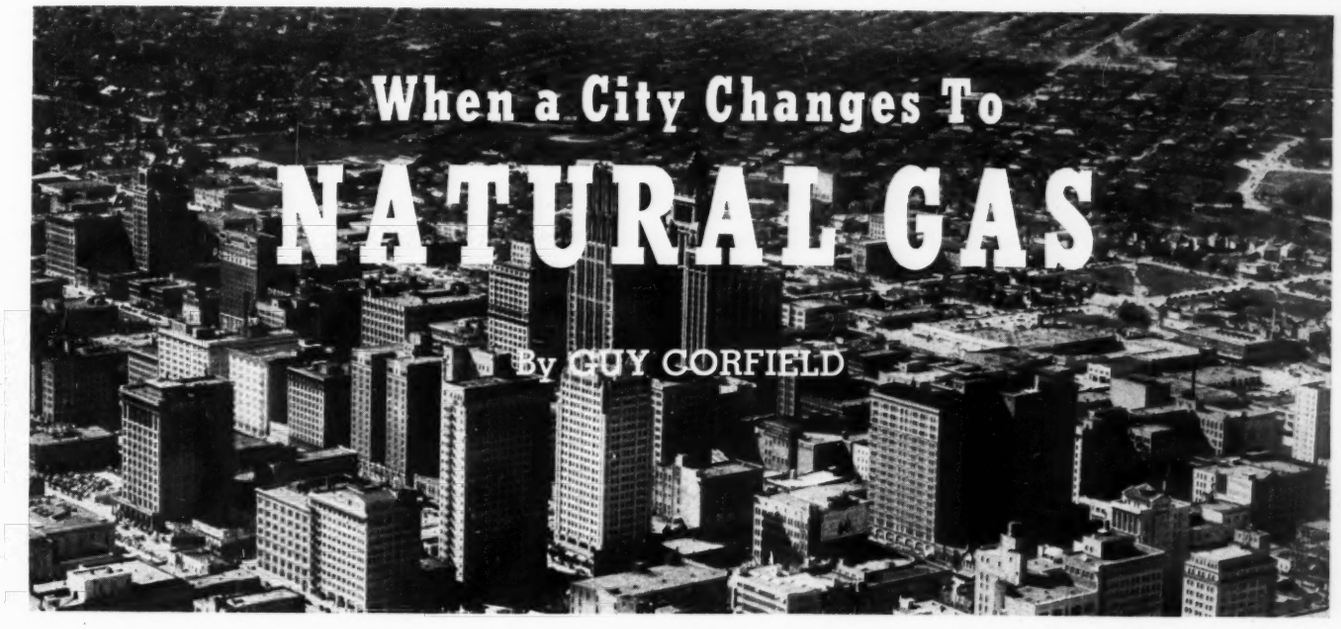
This is no time for doubting Thomases, either with regard to the future of our business or with regard to the future of our country. If those of us who bear management responsibility think that we have been working hard during the past few years, we should realize that what we have done is but a fraction of what we will be called upon to do. The days ahead will not be easy days but they will be interesting days. They will be full of problems but also full of opportunities and as we strive and struggle we will have the satisfaction of knowing that we are doing a worthwhile and essential job.

■ ■

Lone Star Gas Co. Wins Gate Rate Case

The Lone Star Gas Co., Austin, Texas, was victorious April 30 when the Texas Supreme Court overruled the Austin Court of Civil Appeals in the company's gate rate case. The Civil Appeals Court had upheld a Railroad Commission order issued in 1933 reducing gate rates from 40 to 32 cents per M c.f.

After reversing the Court of Civil Appeals on a number of points, the State Supreme Court remanded the case back to the District Court for a new trial on the ground that the trial court, in which a judge and jury had held for the company, had erred in the admission of certain evidence.



PART III. A Summary of the Experiences of 38 Companies Changing to Natural Gas; Data on Changeover Equipment

IT was not so many years ago that natural gas was considered as purely a by-product of oil production. To trace the growth of the industry from its first uses in localized sections to its present national position would require many pages. It is sufficient to say that the natural gas industry today is of national importance, and that through its ever-expanding pipe lines this flexible fuel is being carried to more and more of the nation's metropolitan centers. As evidence of the continued growth of the natural gas industry, we point out that during the period January, 1940, to April, 1941, a total of 8453 miles of pipe line was either completed, in the process of being built, or had been proposed for construction, at a cost of $240,000,000. (See *GAS*, May, 1941, page 57.)

Within the past 15 years such great metropolitan centers as Atlanta, Birmingham, Chicago, Denver, Detroit, Los Angeles, Memphis, New Orleans, Pittsburgh, San Diego and San Francisco have introduced natural gas service. As this issue of *GAS* goes to press it is learned that a movement is under way in Michigan to supply 66 communities with Texas natural gas through the pipe line facilities of the Panhandle Eastern Pipe Line Co.

To determine the effect in making the chargeover from manufactured to natural gas on operating procedures, on sales volumes, and on revenues, 38 typical gas operating companies who had changed over were queried on their experiences.

The total number of meters covered in the replies to the questionnaire were 1,963,942. The smallest number of meters reported by any one company was 200, and the largest was 820,000. The smallest community involved had a population of 1800 and the largest city had a population of 3,376,438. Total population in areas served by the reporting companies was 8,385,384. This range of experience from a small company operating in a rural community to a very large company operating in a metropolitan area guarantees that the findings of this study are representative.

In considering the various increases in gas sales and in added customers after the changeover, it is necessary to make allowance for the normal increase in business as a result of population growth. For the 38 reporting communities, the average percentage increase in population in the five years following the changeover was 12.34%.

In computing the average percentage of increase in gross sales for the five years after changeover, the gross sale in MM c.f. of the year preceding the changeover was taken as the base figure. The increase was slightly over 200%. Since this indicated increase in gross sales cannot be accounted for by the population increase of 12.34%, it is logical to assume it resulted from a radical increase in the per capita consumption of natural gas after the changeover. One company, for instance, reported that the load for space heating jumped from approximately 10 million therms the year previous to the changeover to more than 25 million therms in the five years after.

In the same manner the average percentage of increase in all types of customers in the five years following the changeover also exceeded the average percentage of gain in population. This gain in customers amounted to 16.6%.

In determining the conditions stimulating the increase in the per capita consumption, and the increase in the number of consumers, the average B.t.u. of the gas delivered before and after the changeover is significant. Before the changeover the average B.t.u. was 568. After the changeover the average B.t.u. was 1010.

The frequent reductions in rates that accompanied the changeover from manufactured to natural gas, plus the increase in B.t.u. of the natural gas, made both necessary and possible a wide extension of the service that could be sold to the customer. Particularly was this true in the case of the space heating load, and practically every company showed a large increase in this field.

The need for increasing the load per customer in order to maintain revenue levels suggests the desirability of developing special selling campaigns designed to encourage the installation

TABLE No. 1. BASIC TRENDS AFFECTING THE OPERATION OF GAS UTILITIES CHANGING OVER FROM MANUFACTURED TO NATURAL GAS

(As Revealed by Data Supplied by 38 Reporting Companies)

Total number of meters changed over	1,963,942
Smallest number of meters in one company	200
Largest number of meters in one company	820,000
Total population in affected areas	8,385 384
Smallest population in community affected	1,800
Largest population in community affected	3,736,438
Average gain in population during five years following changeover	12.34%
Average B.t.u. of gas before changeover	568
Average B.t.u. of gas after changeover	1,010
Average percentage of increase in gross sales five years after changeover—slightly over	200%
Average percentage of increase in all types of customers during five years following changeover	16.67%
Average number of months complaints attributable to changeover were received	7.8
Shortest complaint period reported	1 month
Longest complaint period reported	3 years
Customers' leading cause of complaint	Appliance adjustment

of additional appliances by the consumers. New market possibilities in industrial installations were also opened, and here again special training of sales forces to take advantage of the lower rates and higher B.t.u. content in competing against established fuels appears logical.

In attempting to determine the effect of the changeovers on revenues, three questions were asked: First, was there an increase or decrease in both gross and net revenues as a result of the changeover. Second, did the gross and net revenues increase or decrease in the first year following the changeover. Third, did gross and net revenues increase or decrease over a five-year period following the changeover.

To the first question as to whether or not there was an increase in revenues, 29 replies were received. Twenty-four reported increases in gross revenues and five reported decreases, and 20 reported increases in net revenue and nine reported decreases.

To the second question as to whether or not there was an increase of revenues in the first year following the changeover, 30 reported on the gross, with 18 showing an increase and 12 showing a decrease. On net revenue, 28 replied, with 11 reporting increases and 17 reporting decreases.

To the third question, as to whether or not the revenues increased during the five years following the changeover, 25 replied with 23 reporting increases in gross revenues and two reporting decreases. On net revenues, 19 reported increases and six reported decreases.

In answer to the question as to the classification in which the revenue increases were the largest, 24 named the domestic load, two the commercial load and seven the industrial load.

Answers to the several queries on the type of complaints resulting from the changeover, and the period during which they persisted, were mixed in their trend. In last month's discussion of this problem the results of a survey of a few large companies were given. The findings in this more comprehensive study closely follow those previously reported. In the present survey, the average number of months in which complaints attributable to the changeover were received was 7.8. The shortest period was reported to be only one month, and the longest was reported to be three years. As might have been expected, the leading cause of complaints was the maladjustment of appliances, with particular trouble in adjusting pilot lights.

To the question of the special personnel needed to handle complaints, 20 companies replied that no additional personnel was needed, and six reported that it was necessary for them to make provision for enlarging their staffs during the adjustment period.

Of the 30 companies replying to the question on whether or not operations were made easier as the result of the increased availability of the gas supply, 27 answered yes and three answered no.

Of the 30 companies replying to the question as to whether operations were easier as the result of cleaner gas, 24 answered yes and six answered no. Of the 30 companies replying to the question as to whether operation was easier as a result of an increased capacity of the system because of the higher B.t.u. of natural gas, 25 answered yes and five answered no.

The question of standby facilities is always a troublesome question to companies contemplating the making of a changeover. The result of this study showed that of the companies reporting, five used high pressure holders, 12 used low pressure holders, four used additional pipe line capacity, two used liquefied petroleum gas standby plants and 10 utilized manufactured gas plants. Some of these companies used several of these arrangements in conjunction with each other.

EQUIPMENT DATA

Following is a discussion of important equipment and apparatus used in changeover operations, together with a listing of the chief sources of supply.

1. *Calorimeters:* Particularly when mixed gas replaces natural gas, and control is necessary to maintain the proper mixture, calorimeters are useful and sometimes practically essential to show at all times the heating value of the components or of the mixture. Calorimeters may be of the indicating type, showing the heating value by flame height or flame appearance in a special burner, or by other visual means; or they may be continuously recording on a time-heating valve chart. Manufacturers:

American Meter Co., 60 East 42nd Street, New York, New York.
Connelly Iron Sponge & Governor Co., 3154 South California Street, Chicago, Illinois.
Cutler-Hammer, Inc.

2. *Gravitometers:* For reasons in a manner similar to calorimeters, gravitometers or specific gravity meters are also useful or necessary instruments. They are also available in the indicating or recording type. Manufacturers:

American Meter Co., 60 East 42nd Street, New York, New York.
American Recording Chart Co., 3118 East 11th Street, Los Angeles, Calif.
Permutit Co.
Precision Thermometer & Instrument Company.

3. *Odorant:* Inasmuch as natural gas has practically no odor when mixed in small proportions with air, it is usually considered desirable, and in some States made mandatory, to add sufficient odor to natural gas to make it detectable under conditions of leakage that might lead to accidents. Natural gas-air mixtures are inflammable or explosive at or above 5% gas, and it is conventional procedure to add enough "odorant" to the gas to make it perceptable to a person with normal sense of smell at a concentration of one per cent in air, thus providing a safety factor of five. The odorants in common use are liquids containing various percentages of organic sulphur compounds, the sulphur compound being the active or odorous ingredient. These liquids have sufficient vapor pressure to vaporize completely under operating conditions of

gas main pressure and temperature. Manufacturers:

Mallinckrodt Chemical Works, 2nd & Mallinckrodt Streets, St. Louis, Mo.
Shaples Chemicals Co., 23rd & Westmoreland Street, Philadelphia, Pa.
Standard Oil Co.

4. *Odorant Injection Apparatus:* This apparatus functions essentially to inject or allow the vaporization of odorant into the gas stream in the desired quantity per unit volume of gas passing the injection point. The various types are described in a previous section of this "changeover" article, on pages 38 and 39 of the May, 1941, issue of *GAS*. Most types of injection apparatus are automatic and need only to be adjusted to the desired injection rate, and kept supplied with odorant. Manufacturers:

Harry F. Haldeman Co.
National Machine Works.
Peerless Mfg. Co., 113 Murray Street, Dallas, Texas.
Sharples Chemicals Co., 23rd & Westmoreland Street, Philadelphia, Pa.

5. *Water or Steam Injection Apparatus:* When "dry" natural gas replaces manufactured gas in a distribution system, there is a tendency to release solid deposits or corrosion products which may be picked up by the gas stream in the form of dust; such release of solid matter, together with the removal of liquid or semi-solid substances by evaporation into the natural gas, may also cause leaks in "pinholes," threads, gasketed and caulked joints, packing glands, etc. One means of alleviating this difficulty is to inject moisture into the gas, either as a fine spray or as steam. Manufacturers:

The Foxboro Co.
C. J. Tagliabue Mfg. Co.

6. *Oil Fogging Apparatus:* Another way of counteracting the dust and leakage resulting from the drying-out effects of natural gas is to inject oil "fog" into the gas mains, it being necessary to have the oil in the form of very small particles (fog) so that it will be carried some distance before all of it deposits on the pipe walls. This fog can be obtained by either a "cold" atomizing process, or a "hot" vaporizing apparatus followed by condensation when the cold gas mains are reached. Manufacturers:

The Wayne Pump Co.
Western Gas Construction Co.

7. *Dust Scrubbers and Filters:* Another general means of controlling gas main "dust" is by the use of dust scrubbers and filters. Scrubbers are usually designed for handling large volumes of gas as transported in trunk lines, main feeders, etc., and operate essentially on the principle of bringing the gas in turbulent and intimate contact with a liquid (usually oil) which wets and retains the dust; the liquid is prevented from being carried out of the scrubber, by a baffle system; the dust settles to the bottom and may be removed as a sludge or "mud." Filters are designed for gas flow all the way from intermediate distribution line volumes down to the smallest pilot flow on a domestic appliance. They consist essentially of an area or volume of horsehair, metal-wool, glass-wool, cloth or felt through which the gas passes and deposits entrained dust. Manufacturers:

American Meter Co., 60 East 42nd Street, New York, New York.
Blaw-Knox Co., Blawnox, Penn.
Connelly Iron Sponge & Governor Co., 3154 South California Street, Chicago, Illinois.
Cruse-Kemper Co.
Fieser-Lundt, Inc.
Fisher Governor Co., 21 S. 1st Street, Marshalltown, Iowa.
Fluor Corp., 909 E. 59th Street, Los Angeles, Calif.
Gas Consumers Association.
Harper-Wyman Co., 8562 Vincennes Avenue, Chicago, Ill.
Hotstream Heater Co., 8007 Grand Avenue, Cleveland, Ohio.
Lincoln Brass Works, Inc.
Mulcare Engineering Co.
Patrol Valve Co.
Pipe Line Service Corp.
Reliance Regulator Corp., 1000 Meridian Avenue, Alhambra, Calif.
Roberts Brass Mfg. Co., Schoenberger Co., W. J., 8810 Harvard Avenue, Cleveland, Ohio.
Semet-Solvay Engineering Corp., 40 Rector Street, New York New York.
Sprague Meter Co., 35 South Avenue, Bridgeport, Connecticut.
Stacey Manufacturing Co.
United Engineers & Constructors, Inc.

8. *Leak Detectors:* Inasmuch as the introduction of natural gas has a tendency to cause leakage in a former manufactured gas distribution system, the leak detector is a valuable instrument. Such instruments, by means of dial readings, indicate the presence and approximate concentration or volume of gas leaking from bar holes or cracks in paving; or detect the existence of gas in basements, manholes, underground vaults and other places where leaking gas might collect. Manufacturers:

E. D. Bullard Co., 275 Seventh Street, San Francisco, California.
Davis Emergency Equipment Co.
Fisher Scientific Co.
Hays Manufacturing Co.
Johnson-Williams, Ltd.
Mine Safety Appliance Co.
Mulcare Engineering Co.
Short & Mason.

9. *Leak Sealing Liquids:* Inasmuch as leakage is often caused by the drying out of gasket and joint-caulking material, liquids have been developed for the purpose of revivifying, swelling, preserving or otherwise restoring and maintaining the effectiveness of these materials. Such liquids can be sprayed into the mains, or introduced in liquid form to travel by gravity, or injected directly into the joints. Manufacturers:

Carbide & Carbon Chemicals Corp., 30 East 42nd St., New York, N. Y.
Crowley Tar Products Co.

10. *Leak Clamps:* Leaking joints of all types can be made tight by the external application of clamps, usually incorporating rubber gaskets. Clamps are also designed for stoppage of leaks, from pinholes or cracks, in the run of the pipe. Provision is made for installation, in the presence of the leaking gas, without need for shutting down and releasing pressure from the line. Manufacturers:

Dresser Manufacturing Co., Bradford, Pa.
National Supply Co., 3320 Bishop St., Toledo, Ohio.
M. B. Skinner Co., South Bend, Ind.

11. *Valve Packing and Gaskets:* As already discussed, valve packing and gaskets, in use on manufactured gas prior to the changeover, may shrink and develop leaks. They should be replaced with materials that are designed for natural gas use, *i. e.*, they should possess the necessary lubrication or flexibility characteristics and be able to retain them in contact with natural gas. Manufacturers:

Garlock Packing Co.
Merco-Nordstrom Valve Co., 2431 Peralta St., Oakland, Calif.
Milwaukee Gas Specialty Co., 2025 West Clybourn Ave., Milwaukee Wis.

12. *Pipe Thread Compounds:* For the same reasons as given directly above, when threaded pipe joints are remade or newly made, for natural gas service, a suitable compound should

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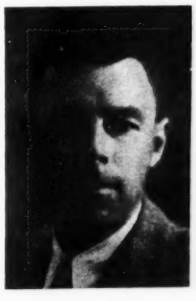

GUY CORFIELD

THIS IS THE third and final article by Mr. Corfield dealing with changeover operations. Part one of this series was published in the May issue of GAS (page 33), and dealt with the technical and distribution aspects of replacing manufactured with natural gas. The second article in the series, dealing with the utilization aspects of changeover, appeared in the June issue of GAS (page 23). In this article Mr. Corfield discusses briefly the various types of equipment that are used in making the changeover, and the data obtained through a questionnaire sent to companies changing over from manufactured to natural gas is summarized. — Editor.

be used that will not dry out, harden or "freeze" the joint. Manufacturers:

Crane Co.
Key Co.
Mulcare Engineering Co.
National Supply Co., 3320 Bishop St., Toledo, Ohio.

13. *Gas Cock Lubricants:* Also for reasons just discussed, the proper type of gas cock lubricant should be used when re-greasing or initial greasing is done, so that the cock will retain its ease of movement without leakage. Manufacturers:

Milwaukee Gas Specialty Co., 2025 West Clybourn Ave., Milwaukee, Wis.
W. J. Schoenberger Co., 8810 Harvard Ave., Cleveland, Ohio.

14. *Valves, Orifices and Inserts:* During the appliance adjustment phase of a changeover, it will often be necessary to install a new valve or orifice, or change the size of the existing orifice by means of an insert. An adequate number of these fittings, in various sizes and styles, should be kept on hand. Manufacturers:

American Meter Co., 60 East 42nd St., New York, N. Y.
Bastian-Morley Co., Inc., La Porte, Ind.
Bryant Heater Co., 17887 St. Clair Ave., Cleveland, Ohio.
Connelly Iron Sponge & Governor Co., 3154 South California Ave., Chicago, Ill.
Crane Co.
Fisher Governor Co., 21 South First St., Marshalltown, Iowa.
Foxboro Co.
General Controls Co., 810 Allen Ave., Glendale, Calif.
Harper-Wyman Mfg. Co., 8562 Vincennes Ave., Chicago, Ill.
Hotstream Heater Co., 8007 Grand Ave., Cleveland, Ohio.
Kitson Co., 1600 Arch St., Philadelphia, Pa.
Lattimer-Stevens Co., Marion Road, Columbus, Ohio.
Merco-Nordstrom Valve Co., 2431 Peralta St., Oakland, Calif.
Milwaukee Gas Specialty Co., 2025 West Clybourn Ave., Milwaukee, Wis.
Minneapolis-Honeywell Regulator Co., 401 East 28th St., Minneapolis, Minn.
Mueller Co., Decatur, Ill.
Pittsburgh Equitable Meter Co., 400 North Lexington Ave., Pittsburgh, Pa.
Reliance Regulator Corp., 1000 Meridian Ave., Alhambra, Calif.
Reynolds Gas Regulator Co., 1416 Lincoln St., Anderson, Ind.
Robertshaw Thermostat Co., Youngwood, Pa.
Schoenberger Co., W. J., 8810 Harvard Ave., Cleveland, Ohio.
Spencer Thermostat Co., 36 Forest St., Attleboro, Mass.
Titan Valve Co., 9913 Elk Ave., Cleveland, Ohio.
White-Rodgers Electric Co.

15. *Flue Gas Analysis Apparatus:* Most industrial gas-burning installations, and many commercial installations, require individual combustion adjustment when supplied with the new gas. Such adjustment is greatly expedited, and rendered most exact, if flue gas analysis apparatus is available with which to control the ratio of gas to primary and secondary combustion air. Manufacturers:

Bacharach Instrument Co.
Burrell Technical Supply Co.
Hays Mfg. Co., 12th and Liberty Sts., Erie, Pa.

16. *Draft Gages and Flue-Gas Thermometers:* Also for adjustment of large gas-burning installations, a draft gage is a valuable instrument with which to check the movement and distribution of combustion products; and a flue-gas thermometer is useful for measuring the temperature of the escaping flue gases and keeping them at a point consistent with proper efficiency. Manufacturers:

Bristol Co.
Ellison Draft Gage Co.
Foxboro Co.
Hays Mfg. Co., 12th and Liberty Sts., Erie, Pa.
Mulcare Engineering Co.
Partlow Corp.
Precision Thermometer & Instrument Co.
Webster Engineering Co., 419 West 2nd St., Tulsa, Okla.

With this discussion we bring to a close a series of three articles published in the May, June and present issues of *GAS*. In this series the changeover operation has been covered from the standpoints of its technical, distribution, and utilization aspects. From the data obtained through the questionnaire, it was apparent that the changing over from manufactured to natural gas has done much to better the position of the utility in its community, both from the standpoint of improved operating conditions and the extension of service to consumers not reached by the supplanted fuel.

Two vast markets yet remain to be reached by natural gas—the Wisconsin area and the great market in New York and the New England states. Operating pipe line companies have already formulated plans to serve these densely populated areas. Whether or not gas will be brought to these areas is now a matter of economics and politics. It is an established fact that if and when natural gas is brought into service in these territories, it will distinguish itself as the fine fuel that it has proved itself to be in serving such great centers as Detroit, Chicago, and San Francisco.

Advances in Gas Analysis Apparatus

IN A RECENT number of the National Bureau of Standards Journal of Research,* Martin Shepherd and E. O. Sperling describe apparatus designed for the analysis of gas mixtures under the following conditions: (1) When the volume of the sample is small — of the magnitude of 5 to 0.5 ml — and a reasonably accurate analysis is desired; (2) when the volume of the sample is of the order of magnitude of 0.2 to 0.1 ml, and an approximate microanalysis is desired; and (3) when the gases to be analyzed are dissolved in some liquid from which they must be liberated prior to analysis, as in the analysis of blood gases.

The apparatus is adapted for use with the admirable procedures of Van Slyke. The present design eliminates the two principal errors inherent in the Van Slyke apparatus, as well as the mechanical shaking, which some have found to be an objectionable feature. By extending the apparatus here described, analysis by combustion may be performed, and greater operating conveniences achieved if desired.

In the same publication is also described apparatus designed by Martin Shepherd and Harry W. Bailey. This apparatus eliminates many of the undesirable features of certain types of "absorption trains" which are intended to remove constituents from gas mixtures or to determine them gravimetrically. It is adaptable to many uses, since auxiliary units, such as combustion apparatus, etc., may be connected by means of interchangeable joints.

In 1931 the Bureau published a description of an apparatus for the volumetric analysis of gases by absorption and combustion. During the past 10 years, this apparatus has become a commercial article and is used industrially. Certain modifications of the original apparatus, adding to its usefulness, are also described in a paper by Martin Shepherd.

Reprinted from the Technical News Bulletin of the National Bureau of Standards for April, 1941.

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Magnolia Petroleum Plans 200-Mile Gas Pipe Line

The Magnolia Petroleum Co., Dallas, is planning the construction of a natural gas pipe line approximately 200 miles long. The pipe will carry gas from the fields in Jackson county to the company's operations in the Beaumont area, Jefferson county, Texas.

Capacity of the new line will be 60,000,000 cu. ft. of gas per day, John Newton, general manager of the Magnolia Petroleum Co., announced. Diameter of the pipe will be 14 in. except in the Beaumont area where it will be increased to 16 in. The company plans to have the line in operation by Jan. 1, 1942.

Summer Air Conditioning

5. Operating Information on Equipment Produced by Mills Novelty Company

BY HENRY O. LOEBELL

Mills Novelty Company,

Chicago, Illinois

THE Mills unit for summer air conditioning and for commercial refrigeration is primarily an absorption refrigerator using ammonia as a refrigerant and water as an absorbent.

The operation follows the conventional ammonia cycle: Evaporation of the strong solution, subsequent rectification and condensing of the pure ammonia vapor. The liquid ammonia is then allowed to expand or evaporate with the resulting refrigeration effect, subsequent to which the ammonia gas is reabsorbed in weak solution, and the resulting liquid transferred back to the generator completing the cycle. This cycle is accomplished without mechanical moving parts; instead the principles of gravity and absorption are used.

The Cycle: The details of this cycle are as follows (see Fig. 1): Heat drives ammonia from a solution of ammonia and water under high pressure (about 185 lbs. per sq. in. gage and 260° F.). This takes place in the generator, the concentration of the solution is reduced thusly to about 25% ammonia. The ammonia vapor driven off carries some water vapor. In the rectifier the

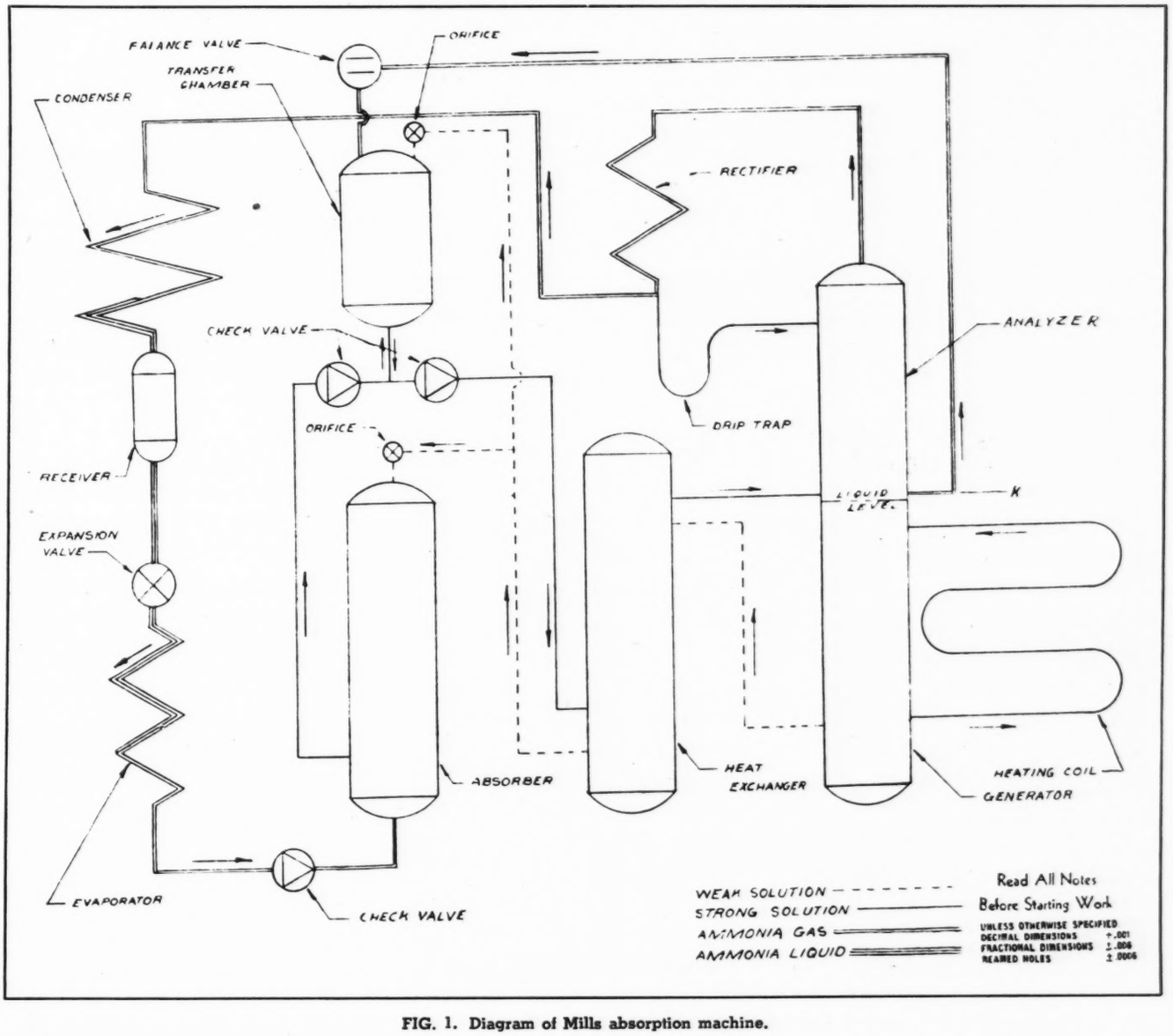
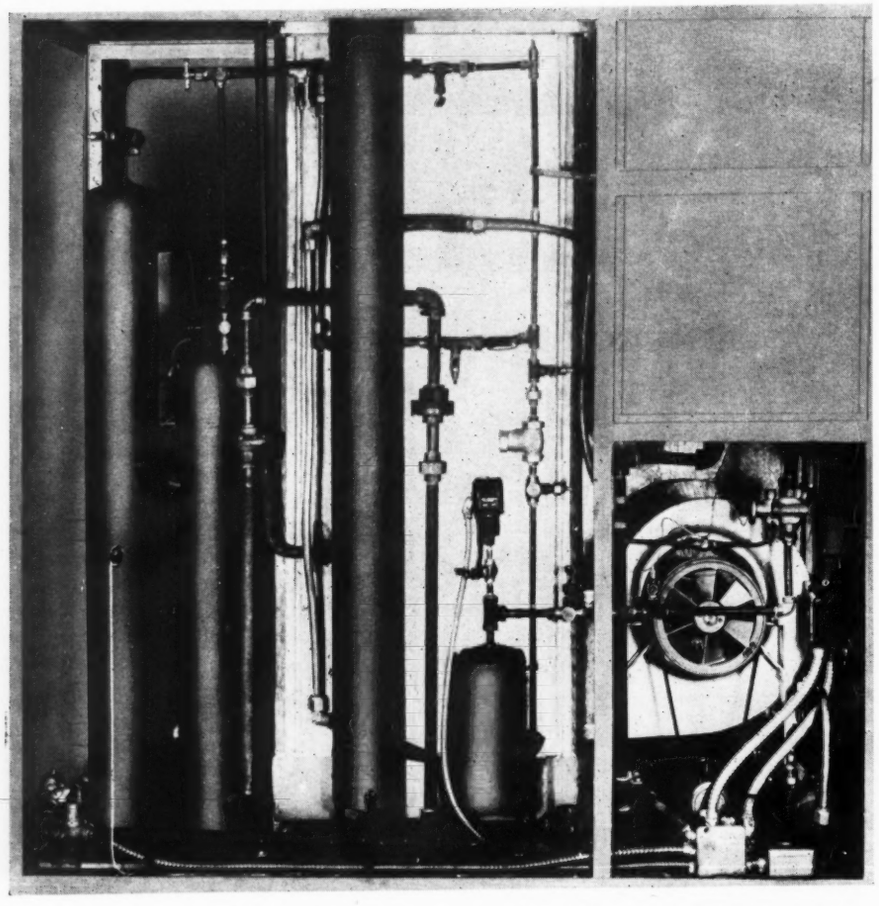
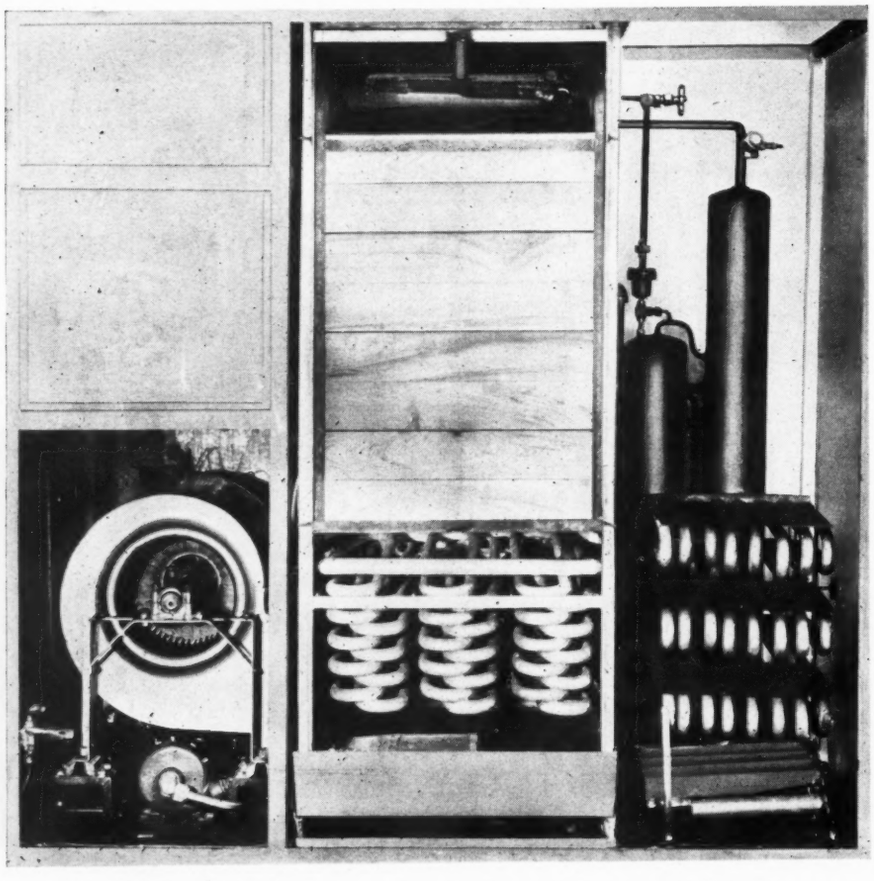


FIG. 1. Diagram of Mills absorption machine.



Showing generator, heat exchanger, absorber, receiver, balance valves, pilot control.



Showing evaporative condenser, heater coils, and ribbon type gas burners.

vapor is cooled and the water is condensed and returned to the generator. The ammonia vapor passes to the condenser where it is condensed and collects in a liquid receiver. All the above parts of the system always maintain generator pressure. From the receiver it passes through the expansion valve into an evaporator maintained at low pressure (15 lbs. to 35 lbs.). The vaporization of the liquid ammonia in the evaporator produces the refrigeration effect. The low pressure ammonia vapor is then absorbed in the absorber under low pressure by weak liquor coming from the generator through a fixed orifice. The strong solution (40% ammonia) so secured in the absorber is returned to the generator via transfer tank, the latter being subjected to low and high pressure alternately.

The only moving parts of the Mills unit are seats of five valves including three check valves, one expansion valve and a specially designed pressure differential valve.

From the above description of the cycle we establish that the elements of the machine consist of:

1. An independent heating system—furnace, gas burners, etc.

2. A high pressure system including generator, rectifier, condenser and heat exchange.

3. A low pressure system consisting of an evaporator and an absorber.

4. A high and low pressure transfer tank.

5. A vessel in which the evaporator coils are placed and in which the refrigeration effect is imparted to the medium to be used — water or antifreeze solution.

6. An extraneous cooling system to cool rectifier and condenser—all these interconnected with conduits and intercepted in certain places with valves or controls.

Solution Transfer: The all-important function of solution transfer is obtained as follows: From the high pressure to the low pressure the transfer is directed through orifices or expansion valves.

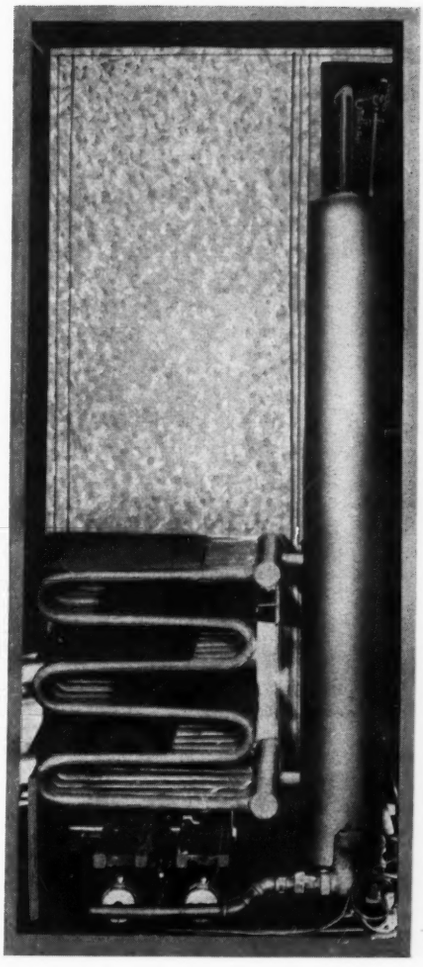
From the low pressure to the high pressure all transfer is made through the transfer tank, which functions as follows: Assuming that the transfer tank is full of strong solution and is at high pressure, under this condition the balancing valve would be open; hence the fluids from the generator can enter transfer tank through the valve. The solution would flow by gravity from the transfer tank to the generator via heat exchanger, and at the same time vapor coming from the balancing valve

line would replace the liquid in the transfer tank.

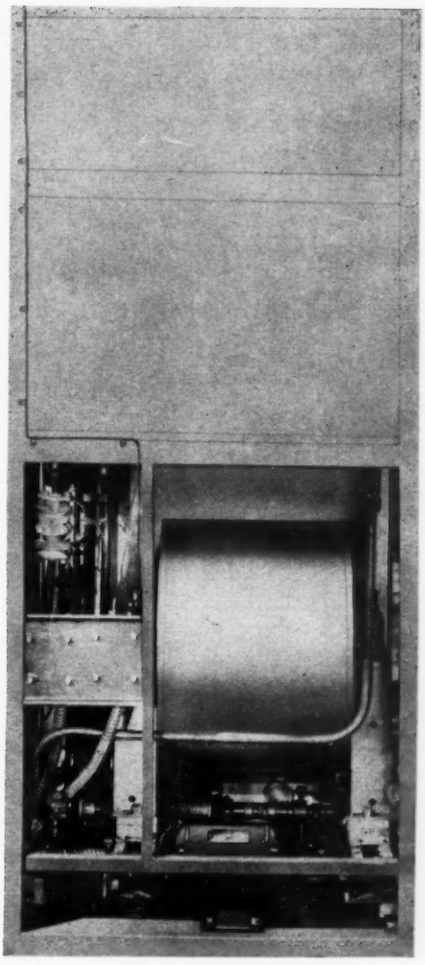
The strong solution from the transfer tank flowing into the generator would raise the generator liquid level, and soon would reach the port where the balancing valve line is connected in the generator. When this occurs, liquid instead of vapor starts to flow into the transfer tank, the vapor pressure in the transfer tank is thereby reduced by absorption.

The balancing valve closes because of unbalanced pressure and a low pressure condition is established in the transfer tank. This reduced pressure condition allows the liquid from the absorber to flow into the transfer tank. As soon as the transfer tank has been filled with solution coming from the absorber, it is repressured by an independent high-pressure line coming from the generator. As soon as the pressure in the transfer tank has reached the high pressure, the balancing valve opens again and the check valve of the conduit from the absorber closes. This in turn establishes an equilibrium at the high pressure of the system and allows the liquid to flow into the generator starting the cycle over again. As the capacity of the absorber to absorb ammonia gas is considerably larger than the capacity of the transfer tank, the cyclic operation of the transfer tank does not interfere with the continuous operation of the absorber.

Characteristics: The generator and analyzer are built into one unit similar in design to the bubble towers used in the oil industry for fractional distillation. The rectifier and condenser are conventional tube design with ample cooling surface. The heat exchanger is also conventional in design of multi-tube nest enclosed. The evaporator is conventional tube design made to fit the specific application for the specific purposes.



Showing heater coils, gas burners, generator, and solenoid gas valve.



Showing chilled water pump and water tank, also cooling tower blower.

The evaporator tanks in which the evaporator coils are located are of two types. For the one-half ton unit: The coils are enclosed in a vessel through which the medium of refrigeration (anti-freeze solution) is pumped counter current. While for the three-ton machine the evaporator tank is full of water and ice and has an outlet for the chilled water at the bottom; the return of the water is carried to the top of the coils and is distributed over the surface of the coils and the ice formed therein.

The absorber is of special design which makes possible large storage of strong solution without interfering with continuous absorption. The cooling system of the air conditioning unit is the conventional type of evaporative cooler using positive pressure air.

The complete unit requires a floor space of 24 in. by 36 in. and 60 in. high for the one-half ton and 30 in. by 73 in. and 75 in. high for the three-ton machine.

The Controls: Control devices are a solenoid operated gas valve, automatic safety pilot, high temperature shut-off, a pressure limit control and a pressure relief valve. The pressure limiting control is a protection against failure of water supply or failure of the high temperature shut-off for any reason. The pressure relief valve is set 25 lbs. per sq. in. higher than the pressure limit control and vents the charge to the outside atmosphere in case of abnormal pressures.

All controls required for the proper interpretation of the use of the cooling medium (thermostats or humidostats) can be connected to the electrical circuit of the machine, thus insuring that the effective use and control of the flow can be secured.

THIS ARTICLE is the fifth in a series being published in GAS and taking up the construc-tion and operating features of the gas-fired air conditioning equipment produced by manufacturers in the United States. The first article in this series, written by H. W. Heisterkamp, covered the equipment of The Bryant Heater Co., Cleveland, Ohio, and appeared in the March issue of GAS (page 19). Author of the second article was G. F. Zellhoefer of the Williams Oil-O-Matic Heating Corp., Bloomington, Ill. (GAS, April, 1941, page 21). The third article in this series was written by G.L. Simpson of the Pittsburgh Lectrodryer Corp., Pittsburgh, Pa. (GAS, May, 1941, page 44), and F. M. Johnson of the Surface Combustion Corp., Toledo, Ohio, was the author of the fourth article published in the June issue of GAS (page 27). The series is scheduled to continue in the August issue with an article from Servel, Inc., Evansville, Ind., and will conclude in September with a contribution from Carrier Corp., Syracuse, N. Y. — Editor.

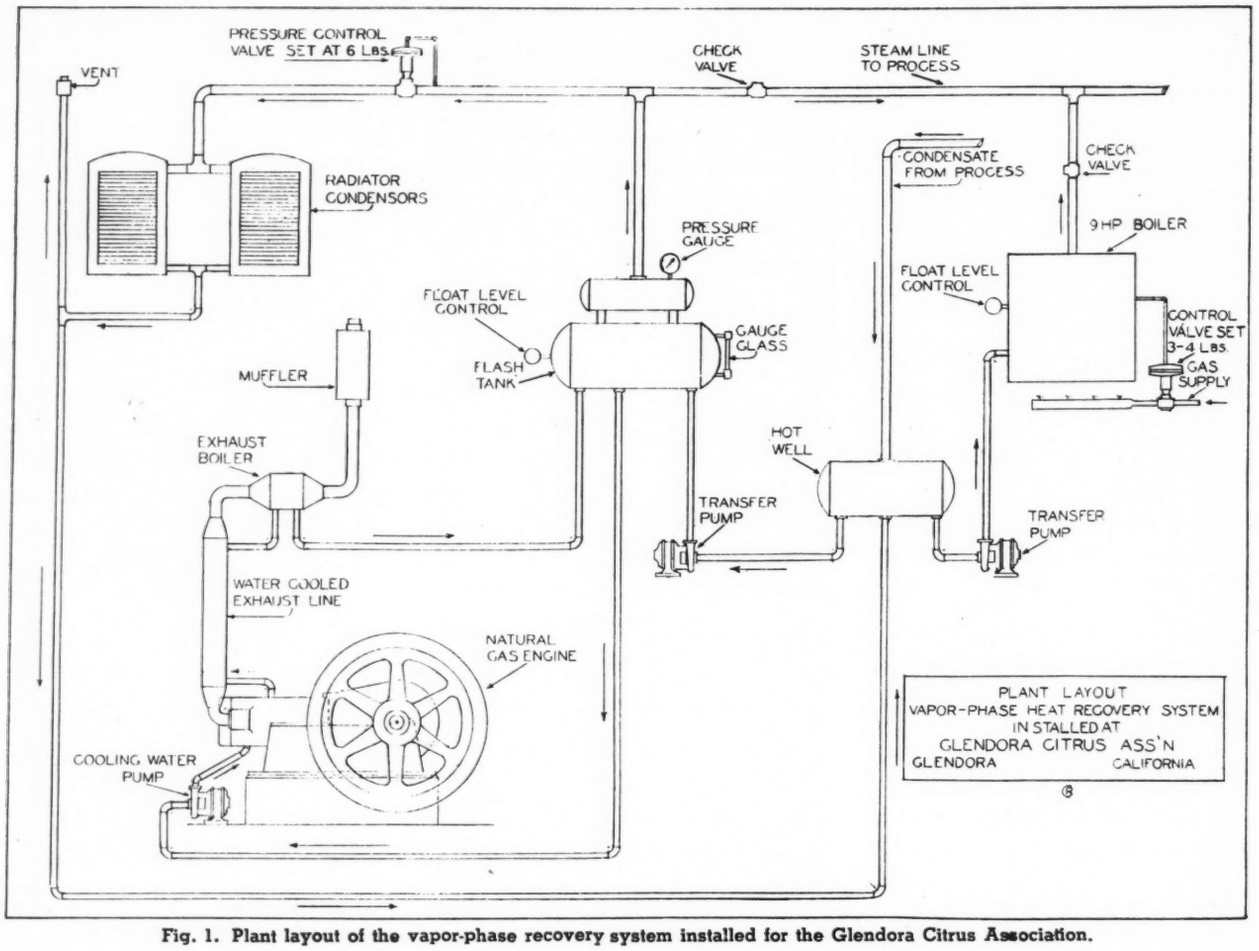


Fig. 1. Plant layout of the vapor-phase recovery system installed for the Glendora Citrus Association.

The Industrial Application of Gas Engine Waste Heat Recovery

By MANLEY H. CLARK

Southern Counties Gas Company

Los Angeles, California

THE importance of waste heat recovery to natural gas engine power promotion in the industrial and manufacturing field is understood after consideration of the average industrial power plant load conditions.

The power load factor of the average industrial manufacturing plant is characteristically poor. Consequently, it is difficult to justify the installation of good gas power equipment to be paid for out of savings in operating costs. In a great many industrial plants, heat or steam is required in some portion of the manufacturing operation. If all or a portion of the cost of producing this heat may be saved through the recovery and utilization of the waste heat from natural gas engines furnishing the power, this additional saving may be sufficient to provide the necessary margin to financially justify installation of the gas power equipment, which would otherwise be impracticable.

An illustration of this condition is found in the average citrus fruit packing house. Most of the western packing houses are equipped with refrigeration units for precooling of the fruit prior to shipping. The fruit is washed in tanks heated with steam supplied by a low pressure boiler. Steam is also required for sweat rooms used for the artificial coloring of some of the fruit. In most such plants, the load factor of the precooling plant is quite high, operating almost continuously for 10 months out of the year. However, the very low load factor of the packing house proper serves to reduce the over-all plant load factor such that gas power application has been difficult from a financial standpoint. On the other hand, the saving of the fuel required for the boiler, without any additional expense or investment, merely by recovery and utilization of the engine waste heat will in most instances be great enough to offset the effect of low load factor in amortization of the power equipment.

A typical example of citrus packing house operation is that of the Glendora Citrus Association of Glendora, Calif. The precooling section of this plant included an electric motor driven ammonia compressor with automatic start and stop operated from head pressure variation, together with motor driven brine and tower pumps, agitator and blower. The packing house proper was powered with a large num-

ber of small electric motors. Heating of the wash water and sweat rooms was accomplished with steam from a gas-fired Bryant boiler.

A new natural gas power plant, with engines equipped for high temperature cooling and recovery of the waste heat, has just been completed for this company, and placed in operation. The installation includes three heavy duty gas engines, two driving alternators for furnishing power for the packing house, precooling auxiliaries and lights, and the third for driving the ammonia compressor for refrigeration. A fourth unit, a small gas engine driven lighting plant, is used for standby lighting when the packing house is shut down.

Generators Synchronized

The generators are equipped for automatic synchronizing. The engine driving the compressor has modulating speed control actuated through temperature variation in the cold rooms. All engines are fitted with automatic safety devices for protection from damage which might arise from lack of lubrication or excessive temperatures. All water and steam controls are automatic so that experienced or trained power plant attendants are not required for the proper functioning of the plant.

The three engines are installed with "Vapor Phase" cooling and waste heat recovery units. See Fig. 1. Engine cooling water passes through the engine water jackets, then to the "water leg," or jacket surrounding the exhaust line for a distance of 8 ft., then into individual fin-tube heat exchangers mounted in the exhaust line directly following the water leg. Water from the heat exchangers from all three engines then passes into a common flash tank. From the steam dome of the flash tank, steam is led a distance of 400 ft. to the coils in the wash tank and sweat rooms in the packing house. The condensate is returned to the hot well where it is fed back to the engine system.

The boiler formerly used as the main source of heat, is now installed to "ride on the steam line" with modulating burner control to cut on and off if and when the demand for steam in the packing house exceeds the capacity of the vapor phase system of the engines.

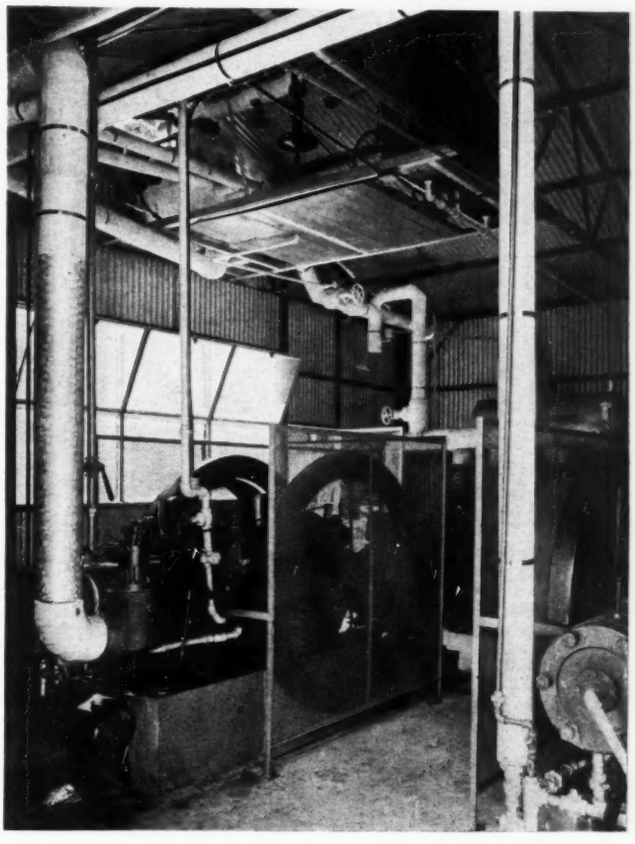
When the capacity of the vapor phase system exceeds the requirements of the packing house the steam is bypassed into air-cooled condensers from which the condensate returns to the hot well for recirculation.

The citrus fruit washing tank is thermostatically controlled at 118° F. by means of a modulation steam valve.

This power plant was designed and installed with the view of obtaining accurate operating data. Meters were installed for gas, power, light and steam, and arrangements made to permit obtaining of temperatures at all points throughout the system.

Two 12-hour test runs have been conducted during regular packing house operation with quite satisfactory results:

1. Of the heat value of the gas entering the engines, 53.64% is being recovered in the form of steam at 6 lbs. per sq. in. gage pressure, with the engines operating under a brake mean effective pressure of 55 lbs. per sq. in.



View showing water jacketed engine exhaust (left foreground), Bryant boiler and hotwell (center background), flash tank (upper left center), and Modine air-cooled condensers (upper right center. Condensate return line to engine No. 2 is shown in right foreground.

2. The heat recoverable per brake horsepower hour is 6004 B.t.u.

3. With generators under 65% load or capacity, and the engines under 55 lbs. per sq. in. brake mean effective pressure, using a short center flat belt drive between engines and generators, the power delivered at the switchboard requires 18,258 B.t.u. per kilowatt hour.

4. The engine driving the ammonia compressor, operating under approximately 60 lbs. per sq. in. brake mean effective pressure, is developing approximately one brake horsepower hour with 10,500 B.t.u. input.

5. The thermal efficiency of the engines operating under these reduced average load conditions has been estimated at approximately 22.8%.

6. Exhaust temperatures are reduced from 1160°F. at the exhaust ports to 250°F. at the outlet from the exhaust heat boiler.

7. The quality of the steam obtainable with this first commercial installation is only 94%. This may be improved slightly with closer regulation of steam pressure just after the steam dome, or may be raised to 100% with additional equipment if desired. However, 94% steam is generally considered as satisfactory for most commercial purposes.

Heat Balance (Generating Units Only)

Electric Power	18.67%
Generator Loss	2.79%
Transmission Loss	1.32%
Waste Heat Recovered	53.64%
Stack Loss	14.80%
Friction, Radiation, and unaccounted for	8.78%
	100.00%

From the foregoing heat balance, it appears that the amount of heat lost through friction and radiation is ex-

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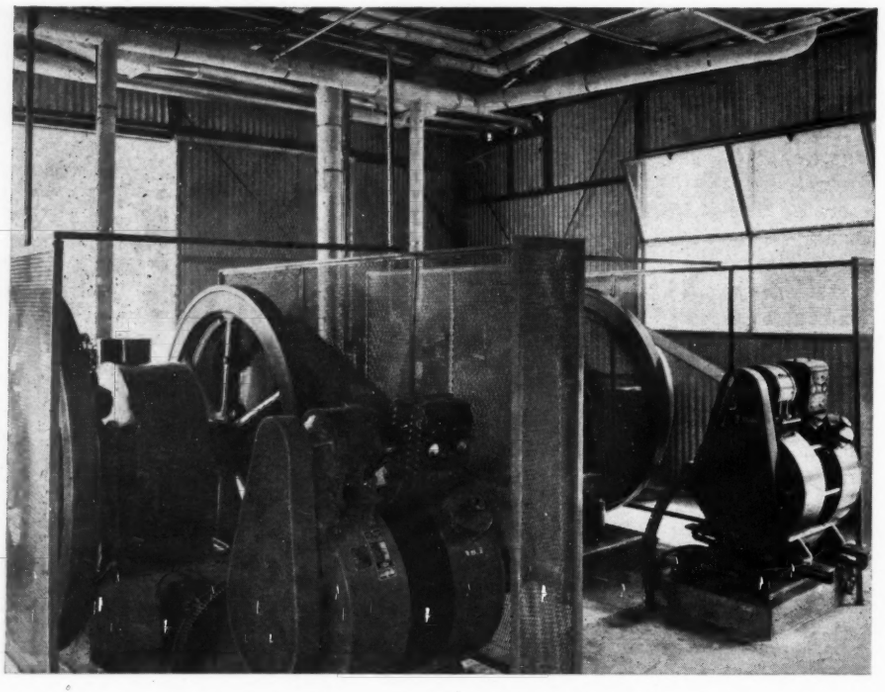
MR. CLARK, in the article herewith published, describes what is probably the first practical gas engine installation utilizing waste heat from the engine exhaust. These operating details are of particular interest because, as noted in the paper, the utilization of such waste heat often tips the scale in favor of the over-all economy of gas engine power. Other reports on this subject have appeared in previous issues of GAS—November, 1939, p. 31, and March, 1941, p. 27. Mr. Clark's paper was presented before the 36th Annual Natural Gas Convention held at Dallas, Texas, May 5-7.—(Abstract by GAS.)



Two 40-hp. Western engines driving Electric Machinery Co. "Packaged" Alternators equipped for automatic synchronizing.

tremely low. This is attributable to the thorough insulation of the entire vapor phase system and piping, and to the very low friction possible in engines, equipped with trunk type pistons, using high temperature cooling. This low friction is the resultant of reduction in oil drag. The latter fact is largely substantiated by the very high thermal efficiency of the engines themselves which, at 55 lbs. per sq. in. brake mean effective pressure, are developing one brake horsepower hour with less than 11,000 B.t.u. fuel input, whereas the best obtainable with this type of engine, cooled at lower temperatures, is approximately one brake horsepower hour with 13,000 B.t.u. fuel input.

The importance of increased mechanical efficiency obtained through reduction in friction is immediately recognized where load conditions do not permit operation of engines continuously at their rated capacity. Mechanical losses remain constant regardless of engine output, thus assuming a higher proportion in the heat balance in relation to the fuel input as the power output is reduced. In other words, any reduction in friction in an engine is magnified under lower than capacity loads.

The reduction in mechanical losses which may be anticipated with high temperature cooling has been indicated in dynamometer tests at the Enterprise Engine factory as being approximately 25% of those prevalent with engines cooled at temperatures of 160°F. Thus, the full load efficiency of an engine may increase approximately 10% with high temperature cooling.

Considering the foregoing test data, it may be ascertained that, by the use of high temperature cooling of engines, recovering the waste heat from the engines makes possible an increase in over-all power plant efficiency to well over 70%. The saving to the consumer in gas previously purchased for operation of the boiler has increased the total annual saving possible through power cost differential by 33 1/3%. This increase more than provides the financial difference necessary to amortize the cost of the power plant over a reasonable period of time, in this case, five years.

Consideration of the multitude of industrial power prospects where heat is required in some form or another will provide an idea of the great importance of this new development in waste heat recovery. The principle may be used anywhere that power and steam represent major items in the list of plant requirements. Laundries, creameries and dairies are especially vulnerable to this type of installation and tremendous reductions in operating costs may be effected. The list of possibilities is almost unlimited.

The natural gas power industry may now step into the industrial power field where waste heat may be utilized to advantage, and safely advocate a proved method of recovery to provide efficiencies heretofore unheard of.

Chattanooga to Reduce Rate; Natural Gas Sought

THE application of the Chattanooga (Tenn.) Gas Co. for approval of a proposed rate schedule was approved recently by the State Public Utilities Commission bringing a 20 to 38% savings to consumers.

The Chattanooga Gas Co., which owns the distribution system now serving the city with manufactured gas, proposes to buy natural gas from the Southern Natural Gas Co. of Birmingham. The city would be tied in with the Southern's pipe line system by a branch running to Chattanooga from Rome, Ga., 44 miles to the south.

C. E. Vandenberg, vice-president of the Southern Natural, which owns the Chattanooga company, testified at the hearing that his firm had available a supply of 13,000,000 cu. ft. of gas daily. He estimated the Chattanooga load would be 5,000,000 cu. ft. and said the company would increase its compressing equipment as needed to take care of the increased use of the fuel.

The rates proposed by the Chattanooga Gas Co. are higher than those proposed by the Tennessee Gas and Transmission Co., which has pending before the Federal Power Commission an application for a permit to serve Chattanooga and other Tennessee points with gas piped from Louisiana. Attorneys said however that a direct comparison was not available because the rates were made on different bases.

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Southern Natural Gas Co. Plans $7,000,000 Expansion

The Southern Natural Gas Co., Birmingham, Ala., has begun a $7,000,000 expansion program which C. P. Rather, president of the company, said would raise its gas delivery capacity by 45,000,000 cu. ft. a day.

A 120-mile pipe line is being laid to connect six new gas wells in Logansport, La., to the company's present line running from Monroe, La., to Atlanta, Ga., the president said in announcing the program.

Other expansion work, undertaken largely because of national defense production includes construction of more than 120 miles of pipe line to parallel the present line and numerous smaller lines, including two new lines under the Mississippi river some 30 miles above Vicksburg.

Mr. Rather said additional wells would be drilled at Logansport and that the new field "will give us ample gas to care for the expected expanded consumption for a number of years to come."

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New Mexico Gas Co. Meets Natural Gas Service Demand

The New Mexico Gas Co., Santa Fe, N. M., recently enlarged its supply lines between the Ute Dome gassers and the pump station at Kutz Canyon in order to meet the increased demand for natural gas service by Albuquerque. Santa Fe and Farmington, N. M.

The Smith Construction Co., Odessa, Texas, has the contract to complete this loop line between Ute Dome and the line which was started last year. The project calls for a 6-in. pipe, 6.6 miles long.

■ ■

Company Refinances Bonds

Coast Counties Gas and Electric Co. has applied to the Railroad Commission of California for permission to refinance outstanding 4% bonds with 3¼%. Directors propose to issue $3 500,000 of the new 30-year bonds to redeem $2,980,000 of the old bonds, and for new capital.

New American Standards for Gas Equipment Adopted

FINAL action was taken May 12, 1941, by the American Standards Association in adopting as American Standard three sets of requirements sponsored by the American Gas Association. These include standards for portable gas baking and roasting ovens, furnace temperature limit controls and fan controls, and for semi-rigid gas appliance tubing and fittings. While the last named are now in their fourth edition, standards for baking ovens and temperature limit and fan controls are now available as national standards for the first time. All three sets become effective on January 1, 1942.

To permit sufficient time for manufacturers to construct equipment to meet the newly adopted standards, mimeographed copies have already been distributed. Any manufacturer so desiring may submit his products for test for conformity with their provisions in advance of the date on which they become effective. Under such conditions Certificates of Approval or Listing will be dated as of the effective date of such standards.

Acceptance by the American Standards Association of these additional requirements brings the total number of American Standards for gas-burning appliances and their accessories sponsored by the American Gas Association to 29. More than 41 different types of major domestic and commercial appliances for practically every heating use have thus been covered.

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Glenn Royer to Represent GAS Magazine in Cleveland

GLENN ROYER

Glenn Royer has been appointed Cleveland, Ohio, manager for *GAS*, with offices at 2232 Adeline St., Lakewood. He will cover a territory including Ohio, western New York, western Pennsylvania, Michigan and Indiana.

Mr. Royer has been associated with newspapers and trade publications in the Cleveland area for a number of years. Among these were the Cleveland *Plain Dealer* and *Institutions*.

■ ■

Texas Companies Merge

The Community Natural Gas Co., Dallas, Texas, on May 21, took over the operations of the County Gas Co., Arlington, Texas, as a result of the merger of the County Gas Co., and the Dallas Gas Co.

Louis B. Hulcy, formerly of the Cleburne, Texas, district of Community Natural, is manager of the new office at 123 West Main, Grand Prairie, Texas. T. W. Grubbs, Jr., service man in the Arlington district, has been transferred to Grand Prairie as outside service man.

■ ■

Gas Customers Increase

One hundred thousand new gas customers have been added in the new residential districts of California as a result of the building boom. Residential gas consumption increased 18.6% in April over the same month a year ago, and revenue rose 10.5%, according to the American Gas Association.

Home Service in National Defense

By JANE L. ROBERTS

GAS HEREWITH PRESENTS portions of a paper presented before the Home Service Luncheon of the New England Gas Association Conference in Boston, March 28, 1941, by Jane L. Roberts, home economics director, Roberts & Mander Stove Co. Miss Roberts is largely responsible for the A. G. A. Interim Bulletin which studies ways in which home service can cooperate with the National Defense program. (Abstract by GAS.)

THE Residential section of the American Gas Association has just published an Interim Bulletin prepared by the Home Service Committee entitled, "The Home Service Department in the Gas Industry Cooperates in National Defense." In this bulletin suggestions are made of ways in which Home Service Women can cooperate with the National Defense Program.

What Home Service Women can do will depend upon two things, first, the opportunities and local agencies with which we may cooperate, and second, the policy of our Company.

Home Service Women in the Gas Industry are in a particularly fortunate position to cooperate with the Defense Program. A number of Home Service Departments have been cooperating for some time with local groups of national agencies for Defense purposes, and many more are planning to do so. We earnestly hope that all men and women in our gas industry will look at this picture with a new and broad viewpoint, of how we may fit into this big plan. Activities are now in a formative stage with changes and new plans being made every day. It is highly desirable that we keep informed of what is going on about us—locally as well as nationally.

It has been said that Home Economists hold the most strategic position in National Defense as well as in the utility business because they have the confidence of the homemaker, they have entré into her home, and many years of experience.

The Gas Company has the facilities and equipment for teaching women more about food ,its selection, storage in the automatic refrigerator, and preparation on modern gas ranges. It can explain the advantages of plenty of hot water from the cleanliness, better sanitation and health viewpoint.

Home Service Women can cooperate with local, county, state and federal agencies and associations which are interested in good health, better nutrition and food problems. Any work that will build up and keep up the good health of children—our nation of the future, is to be particularly recommended.

Efforts are being made by the Federal Government to coordinate plans under trained leaders. We quote from an editorial in the February 1941 issue of the Journal of Home Economics:

"The community organization section of the Consumers' Division of the Council of National Defense has asked national organizations to suggest to state and local organizations ways in which they can work together with state and local councils of defense in the study of community needs and the use of local resources to meet these needs. Home Economists may advise in these community studies and cooperate in some of the activities."

Some types of community service suggested are:

1. Dispensing information on food and nutrition.

2. Assisting in menu planning for the school lunch, when so requested.

3. "Promotion of the use of surplus commodities by families needing and eligible to receive them. This may include demonstration of ways of using surplus commodities . . ."

4. "Interpreting home economics services for all income levels, but especially for low-income consumers. . . Be sure that the programs fit the people for whom they are planned . . . they should aid in maintaining health and physical fitness and in selecting the highest standard of living compatible with the income. . . Keep them safe by means of competent, professional leadership; don't worry too much about who's getting the credit."

The activity of the different groups will vary in each locality. Cooperate with those most in need of your assistance and through which you can help the largest number of people.

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Peoples Natural Gas Co. To Build 28-Mile Pipe Line

Peoples Natural Gas Co., Pittsburgh, Pa., expects to complete by September construction of a 28-mile 6-in. pipe line to bring gas from the Summit Mountain area, Fayette County, to a pumping station at Youngwood, Westmoreland County. The Youngwood pumping station will route gas into lines to Altoona and Pittsburgh.

TABLE No. 1. SALES OF LIQUEFIED PETROLEUM GASES, 1934-40

(Thousands of Gallons)

Year	Butane	Propane	Butane-Propane Mixtures	Pentane	Total
1934	25,553	18,681	10,271	1,922	56,427
1935	34,084	26,814	13 492	2,465	76,855
1936	40,200	36,502	27,375	2,575	106,652
1937	45 399	46,474	46,694	2,833	141,400
1938	52,768	54,130	56,050	2,253	165,201
1939	73,351	79,323	69 020	3,886	223,580
1940[1]	77,056	109,216	123,348	3,836	313,456

[1]Figures for 1940 subject to revision.

L P - Gas Sales Increase 40% in 1940

THE rapidly growing interest in liquefied petroleum gases, stimulated by their numerous uses as fuels, is evidenced in a 40% gain in sales in 1940, when deliveries increased to 313,456,000 gals.* compared with 223,580,000 gals. in 1939, according to the Bureau of Mines, United States Department of the Interior in its report released June 11. The expansion of approximately 90,000,000 gals. in sales during 1940 is remarkable, when it is observed that this increment is nearly equal to the total requirements in 1936 and that the volume of the marketed production of liquefied petroleum gases has about trebled in four years. Total sales for the years 1934-1940, inclusive, are shown in Table No. 1.

All principal uses of liquefied petroleum gases made important gains in 1940 compared with requirements in 1939. Sales for domestic consumption or in the "bottled-gas" trade increased by 53%, while gas-manufacturing companies purchased 31% more liquefied petroleum gases in 1940 than in 1939 for mixture with their manufactured gas and for direct distribution through their lines to consumers. Deliveries of liquefied petroleum gases for consumption as an industrial fuel, which made an outstanding gain of 59% in 1939 in contrast to a loss in 1938, increased only 12% in 1940 over 1939—the lowest rate of expansion for the several principal uses.

Manufacturers of chemicals, who bought smaller quantities of liquefied petroleum gases in 1939 than in 1938 (due partly to overstocking in the latter year) purchased 29% more of these gases in 1940 than in the preceding year. The rapidly increasing use of liquefied petroleum gases as a fuel for internal-combustion engines is indicated by the 81% gain in sales for this purpose in 1940 compared with 1939.

Exports of liquefied petroleum gases by the producers totaled 1,616,000 gals. in 1940—a 3% gain over the 1939 quantity of 1,570,000 gals. Domestic and export sales of liquefied petroleum gases totaled 315,072,000 gals. in 1940, or 40% over corresponding deliveries of 225,150,000 in 1939.

Sales of liquefied petroleum gases in recent years have, broadly speaking, comprised nearly equal proportions of propane, butane, and butane-propane mixtures plus an unimportant percentage of pentane. Deliveries reported in 1940 show a deviation from former annual surveys in that, although there was little change in the propane share (about 35% of total sales in both 1939 and 1940), the relative percentages of butane and butane-propane mixtures in the total have changed noticeably. Butane declined from 32% of the total sales in 1939 to 25% in 1940, while butane-propane mixtures gained correspondingly from 31% in 1939 to 39% in 1940. It is believed that this shift in the percentages of butane and butane-propane mixtures in total deliveries is perhaps due to the diversion of butane for the manufacture of motor fuel, synthetic rubber and other products and also to the fact that distributors were asked to follow specifications for liquefied petroleum gases adopted by the Natural Gasoline Association of America, effective Sept. 1, 1940, in reporting 1940 sales, while for preceding years no agreed-upon or exact specifications were used to separate the several gases covered in the survey.

The proportion of total liquefied-petroleum-gas sales reported for domestic consumption continued its strong upward trend from 35% of deliveries for all purposes in 1938 to 39% in 1939 and to 43% of the marketed production in 1940. Gas manufacturing companies use more liquefied petroleum gases each year, but their proportionate share of the total demand has decreased from 7% for both 1938 and 1939 to approximately 6% in 1940. Industrial requirements for liquefied petroleum gases in 1940 failed to show a large gain, as did the other principal uses; furthermore, sales reported in this classification slumped from 28% of the total in 1939 to 22% in 1940. The chemical use of liquefied petroleum gases increased in 1940 compared with 1939; however, the percentage of this trade dropped from 12% of the total market in 1939 to 11% in 1940.

The consumption of liquefied petroleum gases as fuel for internal-combustion engines is rapidly becoming important, as evidenced by deliveries for this purpose, which increased from approximately 13% of the total sales in 1938 and 1939 to over 17% in 1940. The use of liquefied petroleum gases as motor fuel in areas east of California made an outstanding gain from 5,744,000 gals. in 1939 to 14,783,000 in 1940; deliveries for this purpose on the Pacific Coast increased from 24,048,000 gals. in 1939 to 39,135,000 in 1940—a 63% expansion.

The American Gas Association cooperates each year in furnishing the Bureau with statistics pertaining to the distribution of liquefied petroleum gases by manufactured-gas companies. Details for 1940 are as follows:

"At the end of 1940, liquefied petroleum gas was being delivered through mains to consumers in 168 communities in 31 states by 87 companies supplying 57,900 customers."

Sixty-one distributors cooperated with the Bureau in the 1940 survey of the marketed production of liquefied petroleum gases compared with 50 in 1939. The 1940 total is divided into 19 distributors reporting their sales in the Pacific Coast area and 42 for all other areas. In 1939 17 companies reported in the Pacific area and 33 for the rest of the country.

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New Albany, Ind., Seeks Natural Gas in Near Future

In New Albany, Ind., the Public Service Co., of Indiana, through its Division Manager, J. A. Mishler, promised the New Albany Common Council that it would take immediate steps with the Public Service Commission of the state for approval of a change-over from manufactured to natural gas.

Mr. Mishler stated that the changeover could be made within a few weeks after approval by the Commission. He added, "The company plans an application to the Commission for permission to switch to natural gas, promptly," he explained. A crew of experts, to be headed by company foremen, will be assembled from all parts of the country to change and adjust all burners in use in the city.

*In the February issue of BUTANE-PROPANE *News* (page 11) appeared an advance, unofficial survey of 1940 sales by G. G. Oberfell, Phillips Petroleum Co. His estimate was 300,000,000 gals.

Bill Introduced in Congress To Amend Natural Gas Act

A BILL was introduced in the House of Representatives of Congress on May 20 by Clarence F. Lea of California, chairman of the committtee on interstate and foreign commerce, which proposes the amendment of Section 7 of the Natural Gas Act. This bill has been drawn for the purpose of striking out subsection (c) and making additions which should follow subsection (b). These additions specify that no natural gas company shall operate transmission facilities unless there is in force a certificate of public convenience and necessity issued by the commission authorizing such operations. Exceptions are provided in the cases of properties which were operated on the effective date of the amendatory act. The commission will issue certificate without further proceedings, if the application for the certificate is made to the commission within 90 days after the effective date of the amendatory act.

The bill also provides that the "commission shall have the power to attach to the issuance of the certificate and to the exercise of rights granted thereunder such terms and conditions as in its judgment the public convenience and necessity may require. The commission in granting a certificate may determine the service area to which each authorization is to be limited." Nothing contained in the amendment "shall be construed to affect the authority of a state within which natural gas is produced." However, the commission may, after a hearing, forbid any intrastate construction or extension by a natural gas company which it shall find will prevent a company from rendering adequate service to its customers in intrastate or foreign commerce in territory already being served.

■ ■

Illinois-Iowa Power Co. Asks to Supply Natural Gas

The Illinois-Iowa Power Co. has petitioned the Illinois Commerce Commission for authortured gas in 30 Southwestern Illinois comity to substitute natural gas for manufacmunities, which would result generally in a 10% reduction in rates.

The communities in which the company seeks to supply natural gas are: East St. Louis, Washington Park, Belleville, Swansea, Nameoki, Madison, Wood River, East Alton, Granite City, Venice, Brooklyn, National City, Staunton, Poag, Mt. Olive, Caseyville, Fairmont City, Monsanto, Collinsville, Glen Carbon, Benld, Gillespie, Carlinville, Litchfield, Hillsboro, Schram City, Sunset Gardens, Roxana, Troy, and Edwardsville.

■ ■

Construction to Start Soon On Kansas-to-Nebraska Line

Work soon will be started on the pipe line to extend from the southwest Kansas gas field to Nebraska outlets, it was announced recently. The Kansas corporation commission has issued a certificate of convenience to the Kansas Pipe Line and Gas Corp. for its new line. Pipe is on the ground for most of the line, and work will begin as soon as the weather permits.

■ ■

Shell Brings in Gasser

The Shell Oil Co., on June 2, brought in a large gasser opening up a new gas field 15 miles southwest of Fresno. The pressure on the tubing was reported to be 1600 lbs. per sq. in., with that on the casing rising.

National Woman's Service Center

A NATIONAL CENTER for Women, which will offer services and guidance on virtually every phase of the home and open new frontiers in homemaking for the women of America, has just been organized and will be known as the Woman's Service Center. Director of the Center is Jane Tiffany Wagner, nationally known home economist and former director of the home economics department of Servel, Inc.

JANE WAGNER

Details of the new organization, which will have as one of its major activities a complete home economics consultant service for manufacturers to fill the long-felt need for a closer tie-in between consumer and manufacturer, were explained at a luncheon held at the Waldorf-Astoria Hotel in New York. Present were 200 prominent home economists, business and professional women, and advertising executives.

The Center, which will have its headquarters in Chicago, opening in the early Fall, will include a broadcasting studio, consulting offices, laboratories for product testing, food research laboratory, clothing, food, and art units, as well as "The Home of New Ideas" containing the latest developments in all phases of homemaking. Also, a daily half-hour homemakers' radio program, over Station WENR (Chicago) of the National Broadcasting Co., bringing to feminine air audiences authoritative information on widely varied problems of the home.

There will be three floors of exhibit space for manufacturers in the Center, where their products may be set up in home surroundings and where first-hand consumer reaction may be obtained. Expert advisors of the Center staff will then interpret this consumer reaction to the manufacturers, supplementing it with their suggestions for improvement or revision of products.

Plan of action for the Center will be as follows: Large groups of women, such as Garden Clubs, Women's Clubs, church groups, etc., will be invited each day to visit the Center and listen-in on the radio broadcast. Following a tour of the Center, they may make an appointment, or call back at any time for an interview on any particular home problem they may have.

Activities of the Center will be divided into seven units, each of which will be in charge of an Advisor, or Assistant, who is an expert in her particular field. The units are as follows: Kitchen Planning and Home Equipment; Home Planning; Fashions and Clothing; Food and Nutrition; Cultural Advancement; Demonstration Units; Radio.

The Consulting Service for manufacturers will, in addition to the activities already outlined, furnish manufacturers with detailed reports and recommendations on their products; plan organizational functions; plan and prepare literature supplying the woman's viewpoint; and, in general, present sales angles and sales approaches for women.

In order to effect the fullest degree of cooperation with manufacturers, a New York office will act as contact point for the Eastern Division of the Center.

■ ■

$7,000,000 Natural Gas Line to Serve Deep South

Ford, Bacon & Davis, Inc., New York constructing engineers, were recently awarded a contract to build a natural gas pipe line which will supply a large portion of the deep south with natural gas—probably before the end of the year.

The transmission system will run from the Monroe field in Louisiana, through the steel industrial area of Birmingham, Ala., and serve Atlanta and much of eastern Georgia. It will be a hookup of existing facilities and will cost between $7,000,000 and $8,000,000.

A $15 000,000 gasoline pipe line, also being constructed by the company, to connect refineries in Louisiana with Greensboro, N. C., will supply many southern army camps and industrial centers.

■ ■

House of Representatives Passes Pipe Line Bill

The House of Representatives passed H. R. 4816, the bill to expedite the exercise of the right of eminent domain in the building of pipe lines found to be essential to the national defense on June 5.

An amendment to divorce pipe lines from oil companies, proposed by Congressman Jerry Voorhis (D) of California was defeated 29 to 70, and an amendment proposed by Congressman John M. Coffee (D) of Washington to the effect that the bill should not be construed as authority for proration of fields or restriction of production was also defeated.

■ ■

East Ohio Gas Co. Drills In 2,100,000 cu. ft. Well

The East Ohio Gas Co., Cleveland, Ohio, drilled a well recently in the Clinton sand area near Westchester, Ohio, which came in with a natural flow of gas gaging 2,100,000 cu. ft. per day. All other Clinton sand tests in this section of the state were dry holes. The gas was struck at a depth of 5760 ft.

SALES Slants

Denver Co. Fetes Rotarians

By BERT MERRILL

PUBLIC Service Co. of Denver, Colo., went "all out in hospitality to visiting Rotarians during that organization's recent national convention in the Colorado city, with a number of clever displays and unique entertainment provided in the gas-appliance showroom of the Public Service Building.

Entertainment provided in the showroom included everything from a cowboy band, campfire, truck wagon, and ancient stage coach, to a complete corrall piled with hay, and other western atmosphere. During the association's convention there were displays of saddles, cowboy clothes, and historic relics of the West in Public Service windows to attract the attention of 10,000 or more visitors to the city.

Perhaps the most interesting feature of the "Rodeo Headquarters" theme of the week, were small leather disk souveniers which were given to every visiting Rotarian by the Public Service company. These 4-in. leather disks, with the symbols of the Public Service company's two utility services, were branded with the Rotarian symbol by a special branding iron (fitted with the Rotarian stamp) ordered by the company for the purpose. The hot branding iron used to burn the symbol into the leather disk was fired by a small soldering iron heated by a small gas furnace concealed in a cairn of mountain rocks on the floor of the Public Service company's "corrall." Thousands of these, branded in the presence of the recipient, were given out to visiting Rotarians, and remain as a permanent souvenir of the Denver Gas utility which will be remembered for many years to come.

■ ■

Ads Feature Gas Ranges

The current national advertising campaign of Congoleum-Nairn, Inc., manufacturers of floor coverings, feature modern gas ranges in several of their full-page four-color advertisements of modern kitchens.

Appearing in many national magazines, with several million reader audience, these advertisements illustrating super-modern kitchens, including a modern gas range, once again demonstrates to Mr. and Mrs. John Q. Public the modernity of gas as a fuel. The gas industry may take justifiable pride in the inclusion of gas ranges in the advertising of this prominent company.

■ ■

Youngsters Learn to Cook

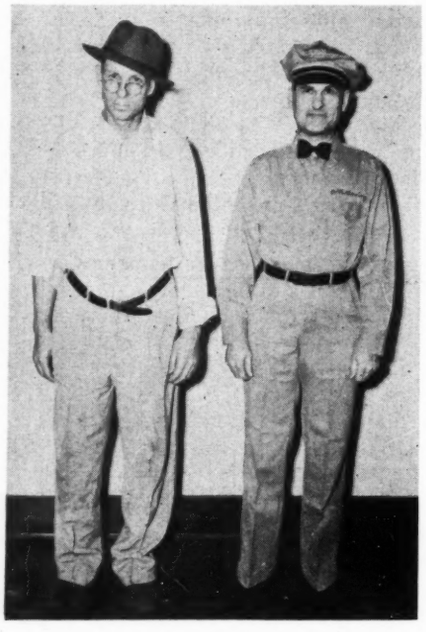
Laclede Gas Light Co.'s Home Service department, under the supervision of Mary Louise Hurster, has been devoting every Wednesday and Thursday evening in April and May to groups of boys and girls from local high schools. Forty to 90 young people have been attending these demonstrations which are to continue through the early part of summer.

The youngsters attending are students in foods and nutrition classes and come down as Laclede's guests for a buffet supper and a demonstration of gas cookery by Ed Howard.

Very simple meals—such as broiler meals, an oven meal with a roast, plain baked potatoes, vegetables in a casserole and an apple betty, are demonstrated. The idea is to convince the boys and girls of the simplicity of cooking with gas and of the importance of preserving vitamins in this simple art of cookery. Mr. Howard always tops off his performance with his famous angel food cake demonstration—and delivers the cake to the school the following day.

The food prepared is given away as prizes to those offering the best impromptu entertainment. The enthusiasm of the groups makes the effort worthwhile, because, after all, they are going to be potential appliance buyers in just a few years.

The Home Service department makes an annual check in May of all of the home economic departments in grade and high schools in St. Louis. In this way it can keep the ranges in good condition and report to the School Board and to the American Stove Co., which has been a contributing factor to the home economics school world, of the ranges that need to be replaced. This department also keeps the home economic teachers well-informed in modern cookery, as the teachers do not have time to experiment with various recipes.



Fred Bailey and Bob Trotter of the Southern Union Gas Co., Dallas, Texas, accounting department give a "before" and "after" picturization of the painting up, cleaning up and dressing up of the gas business in New Mexico.

■ ■

Full Steam Ahead

"Full Steam Ahead" is the slogan of the 4th Quarterly Campaign sponsored by the American Gas Association Refrigeration Committee for the months of July, August and September, 1941.

As explained in previous issues, winners in each classification of each division—for the 12-month period ending September 30, will receive permanent possession of a trophy, christened, "Spirit of '41."

Two salesmen from each division—having the best sales record for the 12-month period ending September 30—will have places "reserved" on the Servel Annual Best Performance Honor Trip. This year the Honor Trip is a trip by rail in deluxe pullmans to Miami, Fla. Optional excursions to either picturesque Nassau, capital of the Bahamas, or to Havana, Cuba, with its Latin-American charm are available.

■ ■

Tie-In Material Offered

The American Meat Institute, in connection with its $2,000,000 national advertising program, is offering nine handy little ads for gas companies to use locally in tying-in with the campaign. These small space ads have been made specially for insertion in gas company newspaper ads and for reproduction on bills, circulars and other promotion literature.

TREAT THE FAMILY to a delicious barbecued roast—the new flame-roasting method of the modern gas range.

There is no charge for the service and companies desiring the local tie-in material may send their order to: Mr. Norman Draper, director, Department of Public Relations, American Meat Institute, 59 East Van Buren Street, Chicago, Ill.

■ ■

Kids Get Cooking Diplomas

Plans were under way in the Home Service Department of the Southern California Gas Co., Los Angeles, as *G A S* went to press, for vacation cooking schools for youngsters, modeled along the same lines as those which proved so successful in the company's Central Division last summer. Classes under members of the home service department were scheduled to open simultaneously on July 8 at five separate points in the Los Angeles metropolitan area and in San Bernardino. Each child attends one class a week, groups meeting on Tuesdays, Wednesdays and Fridays.

The course ends on August 1, a diploma being awarded to everyone who attends four classes. A bank of modern gas ranges were being installed in the various classrooms, giving each child an opportunity to prepare and bake a cake, a pie and other dishes, which will be his to take home. At the end of the course, a cake baking contest, open to everyone who has attended four classes, will be staged, and prizes will be awarded to the winners. Last year, in addition to a large turnout of girls, several troops of Boy Scouts took the course for merit badges, and it is anticipated that boys will be attracted again this year.

■ ■

All-American Prize Fight

Capitalizing on the popularity of one of America's greatest sports, the firm of Belnap and Thompson, 309 West Jackson Blvd., Chicago, Ill.—specialists in the production of promotional plans to stimulate selling efforts, have recently introduced a new campaign entitled "The All-American Prize Fight."

It pits the selling ability of any firms' salesmen against the savage brutality of such formidable opponents as Wild Bull Dozer, Kid Quota, Summer Slump, and Put M. Off Pete.

The Prize Fight theme was selected by Belnap and Thompson because it presents a challenge to the sales force that will get salesmen thinking in terms of "fighting for business." It enables the sales manager, as well as the salesmen to focus direct attention on the one big obstacle to be overcome, and it talks in terms salesmen understand—direct to the point and without mincing words.

The All-American Prize Fight Campaign is designed for use among company salesmen, jobbers, dealers, or dealers' salesmen.

The Belnap and Thompson organization are publishers of the "Push Book"—the successor to Prize Books, which is in use by over 1000 companies to increase sales through stimulation and incentive methods.

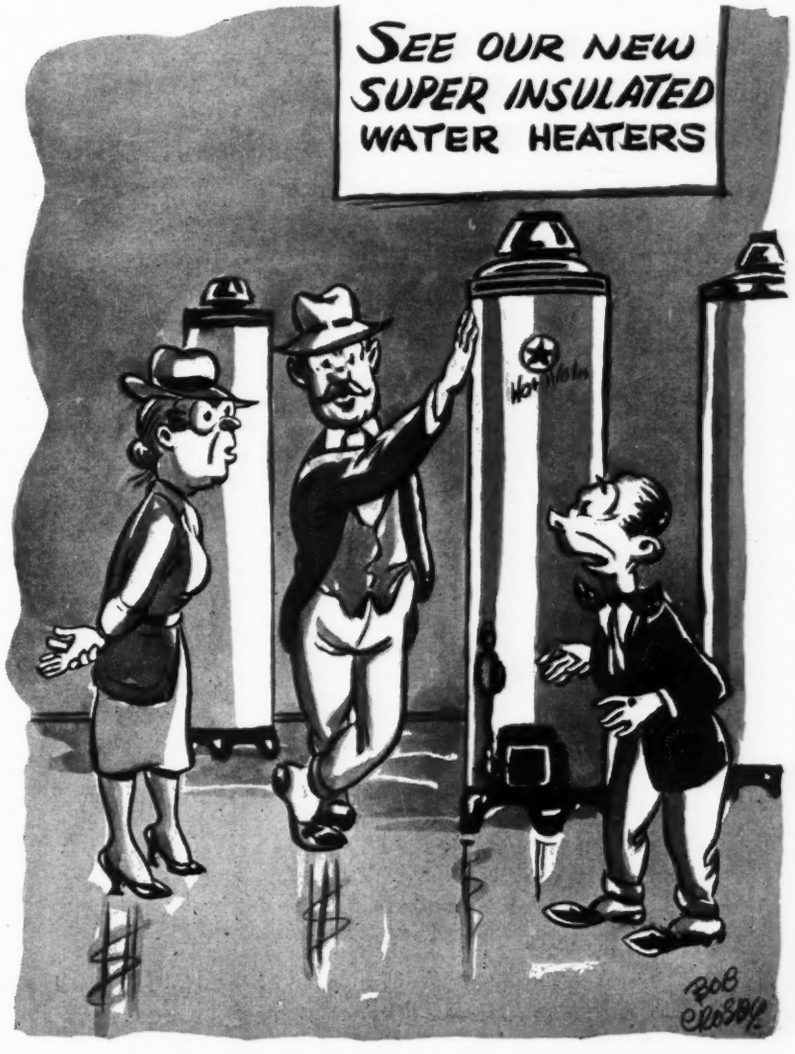
■ ■

Range Won By 13-Year-Old

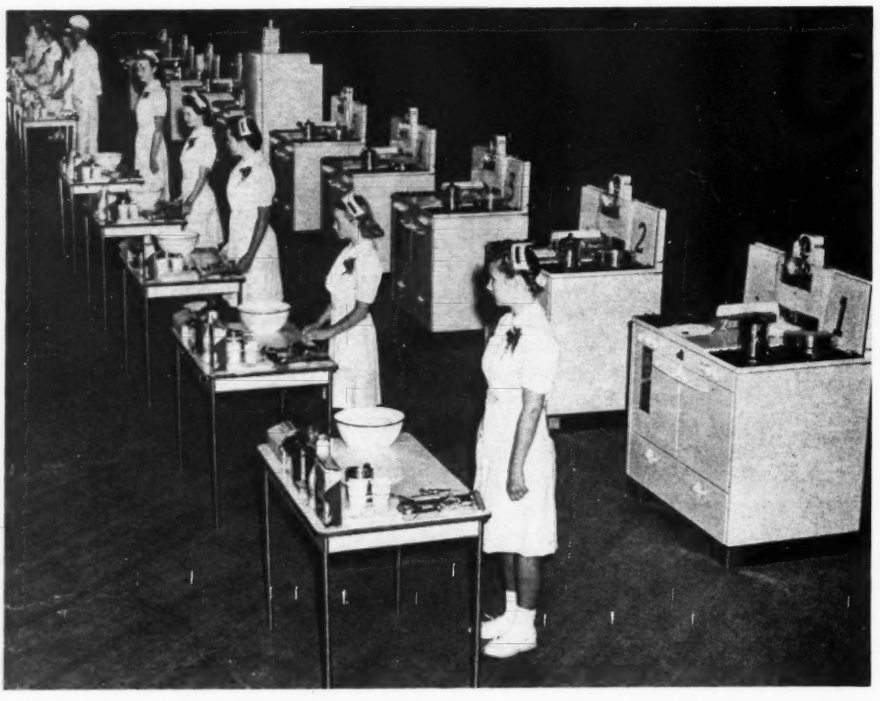
Ten new automatic Magic Chef gas ranges were lined up on the big stage of the Shrine Auditorium in Los Angeles on the afternoon of May 29, and at a signal 9 girls and one boy, representing schools in the Los Angeles City school system, began their annual cake baking contest.

The event, staged yearly by Prudence Penny of the Los Angeles *Examiner* in cooperation with the Board of Education, Southern California Gas Co. and the American Stove Co., was judged by Ann Martin, home economist of the Los Angeles Bureau of Power and Light; Gladys Price, home

DOTTED LINE ROSCOE · By Bob Crosby



"O. K., then, young man, how do you tell when the dang stuff's hot?"



One boy and nine girls baked the cakes.

service supervisor, Southern California Gas Co., and Mary Counselor, head of the Kitchen Round Table, Barker Bros. Selected as best was the cake baked and iced by Lucille Rickert, 13-year-old student of Van Nuys High School, and in addition to an award of a cup for the school trophy case, Miss Rickert received for her performance a new Magic Chef gas range.

■ ■

A Decade of Growth

THE Bureau of the Census has recently issued a report covering the fuel consumption in 169,790 factory establishments of 445 American industries in 1939.

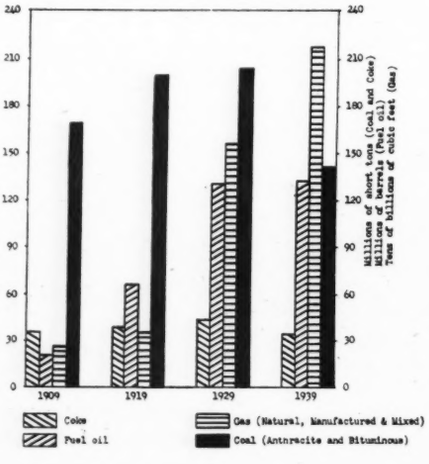
The reported gas consumption in 1939 was materially over that of 1929, but was substantially under that reported for 1937. Gas consumption, including both natural and manufactured gas, totaled 2,195,094,255 Mc.f. during 1939, an increase of 617,814,946 Mc.f., or 39.2 per cent over 1929, but was 293,887,453 Mc.f. under 1937. Of the 1939 gas consumption, 881,830,178 Mc.f., or 40.2 per cent, are reported as natural gas; 1,288,727,385 Mc.f., or 58.7 per cent, was manufactured gas; and 24,536,692 Mc.f., or 1.1 per cent, was mixed (natural and manufactured).

These data on the various classes of gas consumed must be taken with caution since the schedules indicate some confusion among reporting establishments as to the elements entering into the term "mixed gas," which classification includes a mixture only of natural gas and manufactured gas, and not a mixture of two or more classes of manufactured gas. No comparison with prior years is possible in the consumption of the three classes of gas as reported for 1939 as data on "mixed gas" was not called for in the 1929 or 1937 census.

While the 1939 figures do not surpass the high which was reached in 1937, they reveal in their comparison with the year 1929 the gas industry's steady growth and expansion. These figures become even more important in the light of what has happened to some competitive fuels. Comparing the two years, 1929 and 1939, it is seen that the consumption of bituminuous and anthracite coal combined decreased 30.8%. Coke consumption decreased 31%. Fuel oil consumption during the decade increased slightly, the 1939 consumption being 2.2% over 1929.

The chart published herewith compares graphically the status of the gas industry with that of coke, coal, and fuel oil during the 30-year period, 1909-1939.

Consumption of Fuel in Manufacturing Establishments for Census Years 1909, 1919, 1929, and 1939



■ ■

Consolidated Edison Co. Adopts New Policy

IN line with the Federal government's expressed policy regarding curtailment of installment selling in view of the present emergency and the needs which may develop for national defense, Consolidated Edison Co. of New York, Inc., has revised the financing terms applying to the selling of major gas and electric appliances under the company's three-year cooperative plan.

The new terms, which were announced by E. F. Jeffe, vice president, on June 17, became effective June 20, and call for a reduction of the maximum period for time payments from 36 to 24 months and for larger initial down payments. The principal items in this category are refrigerators and ranges. The installment period on other appliances such as laundry and kitchen equipment has been reduced from 24 to 12 months.

In announcing the new terms Mr. Jeffe said: "It is better for retailers and manufacturers to take the initiative in adjusting themselves to the basic changes in merchandising methods which are likely to take place as a result of present conditions. We are glad to be among the first in this territory to take decisive steps toward complete cooperation with the government in its efforts to prevent inflation and solve the greatly accentuated problems of priorities and deliveries."

■ ■

Los Angeles Utilities Open House Heating Campaign

The sixth annual summer discount sales campaign of house heating equipment opened July 1 in territory served by Southern California and Southern Counties gas companies. This year, as last, an offer of 10% discount from the retail installed price of built-in unit furnaces and floor furnaces is being made. Designed to replace existing inadequate and obsolete heating appliances, the offer is open only to owners of homes already built. Contracts are being financed through a modernization loan plan with nothing down, no payment until October, and as long as three years to pay.

The promotion seeks to flatten out the peak which usually occurs in the heating equipment industry during fall months. Both manufacturers and gas companies are benefitted by having installations made before house heating becomes necessary.

■ ■

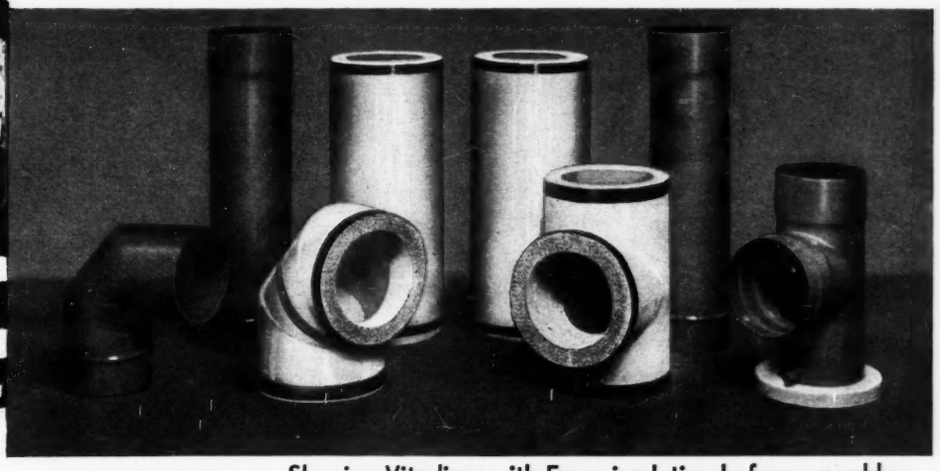
Gas Service Co. Opens New Offices in Newton, Kan.

The Gas Service Co., Newton, Kan., recently opened its new offices and sales rooms to the public at 125 West Sixth Street. The newest in gas range equipment was displayed.

Elsie Gates and Edith Faith, of the company's home service department, conducted cooking and baking demonstrations and offered free samples to all persons attending the celebration. All Newton women who entered the store on that day were presented with special souvenirs. E. A. Wilder is local manager of the company.

A PRACTICAL VENTING SYSTEM

ECONOMICAL
SAFE, DURABLE
EFFECTIVE



Showing Vitroliner with Fyrex insulation before assembly.

VITROLINER
-the Superior Vent Pipe
Trade Mark Registered

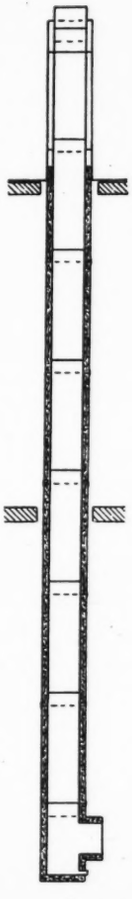
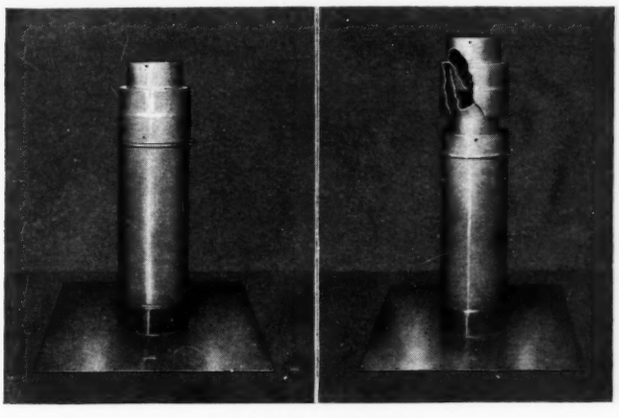


Diagram of Vitroliner outlet vent pipe for gas appliances

SPACE SAVING, UNIFORM, CONVENIENT FOR ANY CONSTRUCTION ARRANGEMENT

A practical venting system which has been in use for many years can now be used with insulation to eliminate the standard masonry chimney. It consists of lengths of acid resisting vitreous enamel coated steel pipe and fittings which are insulated with a high temperature prefabricated asbestos insulating wall one inch thick. This system of outlet and vent piping can be installed inside of partitions or walls (with 1" clearance from all combustible materials) and as such provide an adequate means for venting gas appliances as required in section 1105 of the Building Code.

Approved by Underwriters Laboratories



PATENTS PENDING

New Double Pipe Roof Vents
All Vitreous Enamel

VITROLINER PIPE—A heavy gauge, high quality, welded seam Armco metal coated inside and out with a special high temperature acid resisting vitreous enamel. The pipe is made in stock sizes from 3" to 10" in diameter of 6", 12", and 24" standard lengths; 22½°, 45°, and 90° elbows and open or closed tees with drain provision.

PIPE INSULATION—High temperature asbestos insulation—total thickness one inch. The outer surface is coated with refractory cement. The insulation is made up in cylindrical seamless tubes for all straight lengths. All fittings are split longitudinally. One inch metal bands are provided to hold the insulation in place. Insulation widely accepted in other fields for 30 years.

VITROLINER
-the Superior Vent Pipe
Trade Mark Registered

CONDENSATION ENGINEERING CORPORATION

Ask our engineering department to help you solve any difficult and unusual venting problems.

2515 ARCHER AVENUE • CHICAGO, ILL. • PHONE CALUMET 4362

Gas Utility Revenues Gain in First Quarter

NATURAL and manufactured gas utility revenues amounted to $274,863,800 for the first three months of 1941, as compared with $271,961,700 for the corresponding period of 1940, an increase of 1.1%, it was announced by the American Gas Association on June 2.

The manufactured gas industry reported revenues of $104,811,600 for the first quarter, an increase of 1.5% from the same period of the preceding year. The natural gas utilities reported revenues of $170 052,200 or 0.8% more than for the first three months of 1940.

Total sales of manufactured gas for the first quarter were 114,020,300,000 cu. ft., an increase of 3.0%. Natural gas utility sales for the period amounted to 465,804,700,000 cu. ft.. an increase of 4.3%.

Manufactured gas sales for domestic uses, such as cooking, water heating, refrigeration, etc., were 1.1% below the same period of 1940. Sales for house-heating purposes gained 1.3%, commercial uses gained 2.0% and industrial uses increased 21.2%.

Natural gas sales for domestic purposes showed a decrease of 2.8% while industrial sales gained 11.9%.

■ ■

Church in Coal Territory Uses Gas for Fuel

Since a coal-mining community near Pittsburgh, Pa., has replaced the coal furnace in its church with gas heat, costs have remained constant and cleaning work has diminished. For Bard Manufacturing Co. of Pittsburgh, according to J. L. McCann, manager of plumbing and heating, has installed its largest gas furnace in St. David's Mission Church at Willock, Pa.

The furnace heats the basement and first floor of the church, which houses 300 persons. Since last July, Father H. L. Immekus assures, gas heat has cost no more than soft coal. He says that in this church no other heat would function properly because changing hours of occupancy and extreme temperatures cause intermittent firing.

Automatic controls guard against overheating, and the gas furnace emits clean heat. Cleanliness, says Father Immekus, lessens the manual work because gas heat neither smokes up the church interior nor soils the decorations and altar linen.

■ ■

Servel Issues Portfolio for Apartment House Sales

SERVEL, Inc., Evansville, Ind., manufacturers of the Servel Electrolux refrigerator, have issued a portfolio to gas companies giving factual material on the apartment houserefrigerator market.

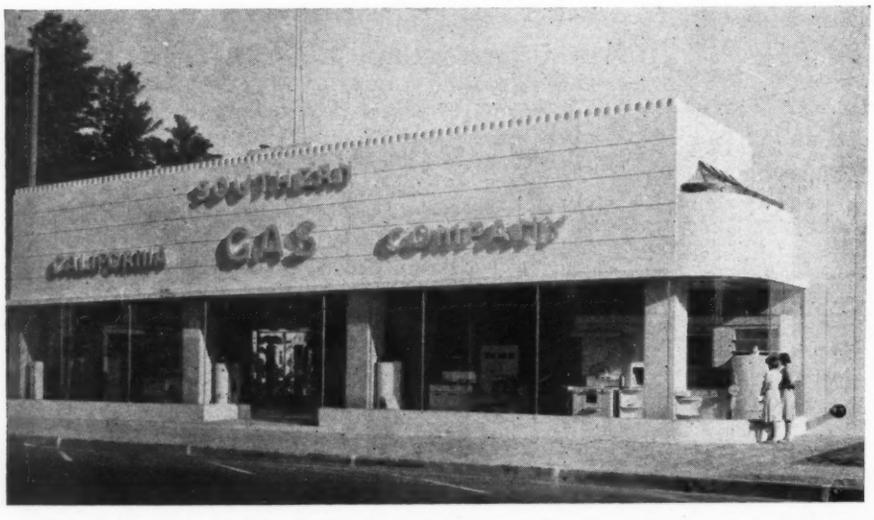
Based on surveys conducted among owners, architects, builders, tenants and others connected with the apartment building field, the booklet states that among these people "the swing is to gas refrigeration." The portfolio has been designed to give prospective buyers for apartment house or multiple housing developments a perspective of the likes and dislikes of present owners of automatic refrigerators.

In the opening pages concrete reasons for the big swing to gas refrigeration are cited not only from the owner's but from the tenant's standpoint. This is followed by a simplified diagram explaining the operation of the Servel Electrolux freezing system. The booklet explains the many construction features of the apartment house gas refrigerator and pictorially highlights these sales points. A section on initial costs and operating and maintenance costs has been provided to show how the gas refrigerator saves money over a period of years.

■ ■

Employees' Leads Set Record

Sales resulting from employees' leads set a new record for the Brooklyn Union Gas Co., Brooklyn. N. Y., during the month of May, 1941. The new record was 41% above the previous high mark, or a total of 835 appliances sold that month. Former record was 593 appliances sold as a result of leads last May.



The handsome new headquarters office building of Southern California Gas Co.'s San Joaquin Valley division, located in Visalia, Calif., was opened for business on June 23. Smartly modern in style and up to the minute in all its appointments, the $100,000 structure provides offices or Division Manager George A. Porter and his staff, and serves as a business and operating office for Visalia itself. A $22,500 air-conditioning plant with a capacity of 30 tons of refrigeration for summer and a gas-fired hot water heating system for winter is a feature of the building equipment.

First prize winner Jack Landman of Union Furniture Co., San Francisco.

California Holds Lead In CP Range Contest

For the second month in succession California salesmen are leading all others in all of the eight cash award divisions of the CP Range contest. Six of the eight winners are from San Francisco and two from Los Angeles.

Winners for April were J. Landman, Union Furniture Co., San Francisco, first prize; Art Sammann. Lachman Bros., San Francisco, second prize; E. J. Peacock, Sterling Furniture Co., San Francisco, third prize; H. C. Spaulding, Sterling Furniture Co., San Francisco, fourth prize; O. Parrett. Redlick-Newman Co., San Francisco, fifth prize; L. K. Ward, Eagle Rock Appliance Co., Los Angeles, sixth prize; E. E. Whelan. The Emporium, San Francisco, seventh prize, and R. Gould, The May Co., Los Angeles, eighth prize.

■ ■

Booklet Describes Four Best Home Demonstrations

The CP Range Sales Promotion Committee has published a booklet which includes the first four prize winning demonstrations in the home service contest sponsored by the A.G.A. Home Service Committee last March in which 29 cash awards totaling $500 were offered.

The demonstrations were set up for not more than 25 minutes in length, and are presented in such detail as to be adaptable for reproduction by home service women, and by salesmen at company and dealer sales meetings. A limited number of copies of the booklet are available at 15c each from the Home Service Counsellor's office of the A. G. A., 420 Lexington Ave., New York, N. Y.

■ ■

Campaign Sells Heaters

As a result of the special advertising campaign conducted during March and April in Northern California by the Master Plumbers Association, 1096 new water heaters were sold. The plumbers put up $1.00 for each old water heater turned in on the purchase of a new one and used the money for their district's campaign.

Heaters For Happy Customers...

Everdur-tanked, of course, because Everdur is rust-proof, strong and lasting

Automatic gas water heaters equipped with tanks of non-rust Everdur* are money savers for the customer...and profit makers for the utility.

They provide the customer with rust-free hot water . . . long, dependable service . . . and complete freedom from all trouble and expense due to rust. From your standpoint, rust cannot interfere with the efficient operation of an Everdur-equipped water heater. Gas consumption is uninterrupted. Unprofitable service calls are less frequent. Customers are satisfied . . . good-will maintained.

Everdur is The American Brass Company's copper-silicon alloy. It contains 96% copper and combines unusual resistance to corrosion with good welding properties and tensile strength comparable with mild steel. Most leading makers of automatic gas water heaters are using Everdur for tanks in non-rust models. 4152

ACCEPTANCE?

With but few exceptions, every large manufacturer of automatic gas water heaters standardizes on Everdur for non-rust models!

• • •

*"EVERDUR" is a trademark of The American Brass Company, registered in the United States Patent Office.

ANACONDA
from mine to consumer

Everdur TANK METAL

THE AMERICAN BRASS COMPANY, General Offices: WATERBURY, CONNECTICUT

Subsidiary of Anaconda Copper Mining Company • In Canada: Anaconda American Brass Ltd., New Toronto, Ont

ASSOCIATION *Activities*

P. C. G. A.'s Northwest Conference

(A GAS STAFF REPORT)

SALES, advertising and public relations. These were the three topics on everyone's lips at the Northwest Conference of the Pacific Coast Gas Association, held in Portland, Ore., June 9 and 10. Attended by 130 delegates from 14 utility companies, the conference featured four general sessions, held in the auditorium of the Portland Gas and Coke Co., the first two presided over by Robert A. Hornby, vice president of the Pacific Lighting Co. and president of the P. C. G. A.; the second pair led by R. E. Fisher, vice president, Pacific Gas and Electric Co.

First speaker on the opening session was Paul B. McKee, president, Portland Gas and Coke Co. (see page 17). Watson E. Derwent, president of the Association of Gas Appliance and Equipment Manufacturers, as the second speaker, in discussing the national picture for gas appliances, told the delegates that the O. P. M. and Priorities Division had given him assurance that gas ranges are as essential in defense as guns.

Three speakers, O. R. Doerr, general sales manager, Pacific Gas and Electric Co.; W. M. Jacobs, superintendent of sales, Southern California Gas Co., and John E. Bogan, sales promotion manager, of the Range Division, A. G. A. E. M., respectively, took up the subject of sales from the three standpoints of: (1) Business Development Planning, (2) Competitive Selling, (3) What CP is Doing for the Industry. Mr. Bogan stated that the CP range serves three major purposes: (1) it saves time; (2) it offers increased efficiency at no increase in fuel; (3) it offers improved performance in food savings. Dealing with these factors, the gas industry should see the CP range sales story through the eyes of the consumers.

The evening session opened with an address by N. R. McKee, vice president, Southern Counties Gas Co., who outlined the numerous activities with which his company is engaged in in community development and in public relations. One of the most entertaining and valuable addresses was given by George Mackenzie, assistant secretary for Portland Gas and Coke Co., who in discussing his company's experience with the telephone monitor board demonstrated with recordings the alpha and omega of telephonic conversations by employees with customers. It was Mr. MacKenzie's conclusion that the monitor board to be effective must be used continually eight hours a day.

Other speakers in the evening session were C. A. Renz, general superintendent of Consumer Service, Southern California Gas Co., who outlined the many ways in which service men may be effective in sales and public relations; R. R. Blackburn, general agent, Southern California Gas Co., who discussed the problem of establishing a service policy; and George S. Jones, Jr., vice president and general sales manager of Servel, Inc., who in discussing the appliance salesmen in national defense stated that he liked to consider the energetic and creative salesman as the greatest tax collector of all time, for it is largely through his efforts that business, national income and tax revenue are created.

The Tuesday sessions were held under the chairmanship of R. E. Fisher, the morning session being devoted to the forums dealing with sales development covering (1) dealer outlets; (2) new construction; (3) planning of merchandising campaigns; (4) employee prospect plans. Leaders of these four forums were: John B. Hodgkins, district manager, James Graham Manufacturing Co.; J. C. Gilbert, Santa Monica division manager, Southern Counties Gas Co.; H. W. Edmund, sales manager, Coast Counties Gas and Electric Co., and J. E. Kern, supervisor domestic sales, Southern California Gas Co.

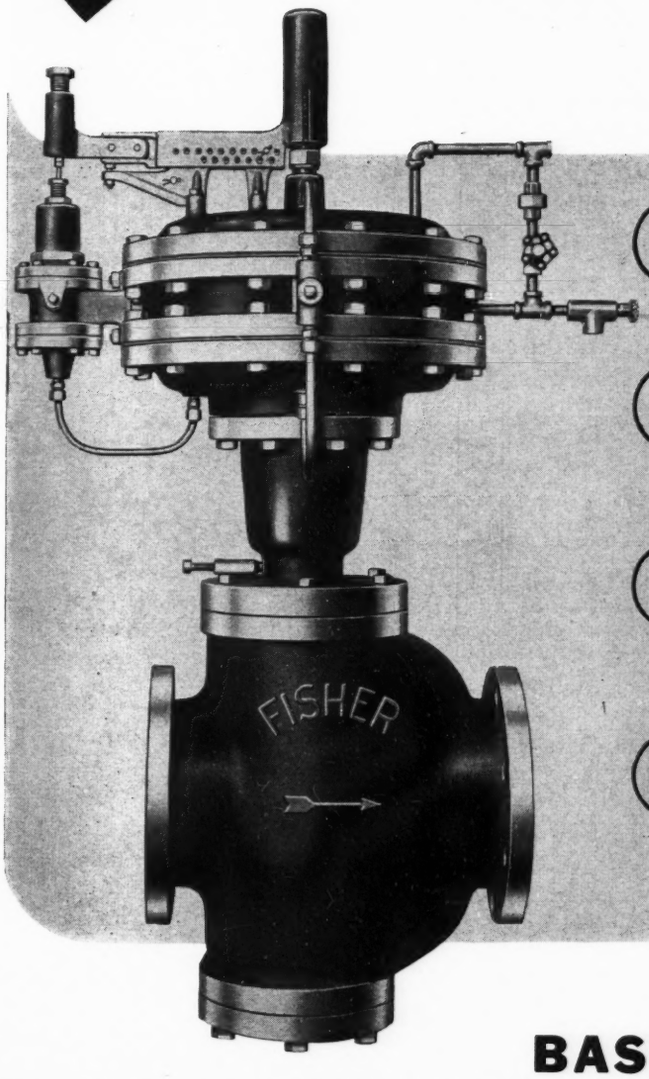
The forum method of discussion was continued in the afternoon session with topics covering commercial and industrial business and gas water heating. Leaders of these groups were J. H. Gumz, industrial engineer, Pacific Gas and Electric Co. and a representative from the Washington Gas and Electric Co., speaking for President T. E. Roach.

National Advertising was discussed by Ralph Calkins, Pacific Northwest manager, McCann-Erickson Co. Supplementing Mr. Calkin's talk was a statement by James F. Pollard, president, Seattle Gas Co., who stated that a committee had been formed to consider the increasing of the national advertising budget.

Quality heating installations were discussed by J. J. Winn, Jr., commercial manager of the Portland Gas and Coke Co., who stated that the solution of this problem was one which had to be dealt with locally. The conference ended with a play, "The Bride Saves the Busi-

AMONG THOSE in attendance at P. C. G. A.'s Northwest Conference. (At left): Frank A. Woodworth, president, Spokane Gas & Fuel Co.; H. M. Thomas, general manager, Northwest Cities Gas Co.; George S. Jones, Jr., vice president, Servel, Inc.; and W. E. Derwent, vice president, Geo. D. Roper Corp. (At right): Clifford Johnstone, managing director, Pacific Coast Gas Association; W. M. Jacobs, general superintendent of sales, Southern California Gas Co.; R. R. Blackburn, general agent, Southern California Gas Co.; and Norman R. McKee, vice president, Southern Counties Gas Co.

FISHER · KING
GAS PRESSURE BOOSTERS
Guarantee



1 **SAVINGS IN "UNACCOUNTED FOR" GAS**
FISHER-KING BOOSTERS permit the reduction of distribution pressure throughout the system on an average of 25 to 50%. This effects immediate economies by reducing gas leakage and "unaccounted for" gas in direct proportion to the pressure reduction.

2 **GREATER ECONOMY IN OPERATION**
FISHER-KING BOOSTERS eliminate countless man hours, truck expense and mileage required for the MANUAL adjustments of lever and weight regulators. By automatically adjusting the downstream pressure in accordance with actual demand these boosters give better control at far less operating expense.

3 **IMPROVED PRESSURE CONDITIONS**
FISHER-KING BOOSTERS automatically maintain a constant delivery pressure at the "low point" in the system regardless of demand load, without excessive pressures at any other points in the system. Delivery pressures are always adequate throughout the system, yet never too high for economy or safety.

4 **BETTER CUSTOMER SATISFACTION**
FISHER-KING BOOSTERS reduce consumer complaints to a minimum and greatly improve customer good will because pressures are always entirely adequate for their requirements. Heavy or sudden demand loads are quickly compensated for by the booster to maintain adequate pressures throughout the system.

THESE CLAIMS BASED ON EXPERIENCE

The results obtained from more than 300 FISHER-KING BOOSTER installations, many of them in operation over a period of 8 years, offer concrete testimony as to the truth of the above claims. Many charts and extensive data, taken from various installations, are available on request. There are numerous instances where the booster has paid for itself in 30 to 60 days in savings effected.

DON'T DELAY . . . .

Right now is the time to modernize your control system with FISHER-KING BOOSTERS. These concrete savings in dollars and cents can be effected in YOUR distribution system. Submit the details of your control problem to a Fisher sales engineer for a complete estimate and recommendation. There is no obligation.

FISHER GOVERNOR COMPANY
• 812 FISHER BUILDING •
MARSHALLTOWN, IOWA

Delegates take time out for a buffet supper at P. C. G. A.'s Northwest Conference. (Left to right): John J. Winn, Jr., commercial manager, Portland Gas & Coke Co.; James F. Pollard, president, Seattle Gas Co.; R. G. Barnett, vice president and general manager, Portland Gas & Coke Co.; Robert A. Hornby, vice president, Pacific Lighting Corp.; and George Mackenzie, assistant secretary-treasurer, Portland Gas & Coke Co.

ness," directed by Rita Calhoun, Home Service Director, Portland Gas and Coke Co., and presented in the company's "Hospitality House," an auditorium in which home service demonstrations are presented before many local organizations throughout the year.

■ ■

A. G. A. E. M. Convention

A GAS Staff Report: President Watson E. Derwent of the Association of Gas Appliance and Equipment Manufacturers called to order on June 3 the first session of the Association's Annual Convention at the Ambassador Hotel in Los Angeles, where delegates from manufacturing companies supplying the gas industry from all sections of the country had gathered for three days of pleasure and business in Southern California.

The general sessions program, held on the morning of June 4, was presided over by President Derwent, who presented a report covering the activities and accomplishments of the Association during the past year. Mr. Derwent expressed his views on what the manufacturers will have to do both to cooperate with the national defense program and to carry on their businesses during a period which will not permit normal business activity.

Visiting delegates were welcomed by W. R. Smith, general chairman of the Manufacturers' Section of the Pacific Coast Gas Association.

Robert A. Hornby, president of the Pacific Coast Gas Association, in discussing the present abnormal times with its rising prices and its sellers' market, warned against the tendency which many firms had shown to curtail sales and advertising activities as a waste of money. Mr. Hornby stated that now is the time to continue with increasing vigor sales, advertising, and public relations activities so that when the present emergency ends, the gas industry will not be among those forgotten by the general public.

Another feature of the general sessions program was C. E. "Deke" Houlgate, representative for the American Gas Association, contacting the motion picture studios in Hollywood, in an address, "Gas Glamour and Gimme." Mr. Houlgate traced the progress which has been made during the past five years in obtaining favorable showings of the gas industry's products in motion pictures. At the present time, said Mr. Houlgate, five major studios are using gas kitchen sets exclusively.

Louis Ruthenberg, president of Servel, Inc., brought the delegates a report covering the progress made in founding the Institute of Technology. (See Page 16.)

The remainder of the program was devoted to social activities. Over 50 delegates participated in the golf tournament held on Thursday at the Wilshire Country Club. Low gross winner was W. H. Vogan, supervisor of the Los Angeles branch of the A. G. A. Testing Laboratories. Mr. Vogan was awarded a permanent trophy at the president's dinner on Thursday evening.

The president's dinner was attended by several hundred delegates and utility company representatives and guests. Presiding at the speakers' table was R. G. Logue, vice president of the Ward Heater Co., and chairman of the convention program committee, who announced the re-election of Watson E. Derwent as president of the Association for the coming year.

A feature of the president's dinner was the appearance of Bob "Now You're Cooking With Gas" Hope, movie and radio comedian.

Hal Singleton of the Grayson Heat Control, Ltd., and chairman of the entertainment committee, did an excellent job in providing entertainment for the delegates during the dinner.

Other events which brought much enjoyment to the guests were a trip on Thursday to Hollywood Park for a day of horse racing and a day's excursion to Catalina Island, 30 miles off the coast of Southern California.

■ ■

A.G.A. Executive Conference

At the close of the Executive Conference of the American Gas Association held in Cleveland, Ohio, on May 22-23, 1941, an informal inspection trip through the Testing Laboratories was made. More than 30 executives from various sections of the country took advantage of this occasion to inspect the expanded facilities of the laboratories, and to observe various test procedures and current research activities under way.

A feature of the American Gas Association Executive Council in Cleveland last May was a trip through the A. G. A. Testing Laboratories. Left to right: F. E. Hanson, engineer, American Radiator & Standard Sanitary Corp.; R. J. Rutherford, vice president, Worcester Gas Light Co.; B. H. Gardner, vice president, Columbia Engineering Corp.; John J. Quinn, sales manager, Boston Consolidated Gas Co.; Dr. F. E. Vandaveer, American Gas Association Testing Laboratories; and Davis M. DeBard, vice president, Stone & Webster Service Corp.

Offering complete facilities for testing and research, more than 40 different types of gas appliances and their accessories are now tested at the laboratories. Visiting executives were afforded an opportunity to inspect apparatus and procedures employed to determine their compliance with applicable American standards. All equipment is of the most modern type, much of it being particularly designed for its purpose. Particular mention may be made of the so-called "magic eyes," a photoelectric reflectometer recently developed by the laboratories for judging even baking characteristics. Probably the most important single item is a gas-cracking plant by which manufactured gas for test purposes is produced on the premises from natural gas locally available.

Research has played an important part in development of nationally acceptable requirements and in achievements of the laboratories. Hence, a great deal of interest was shown by the visiting executives in current research activities, particularly in projects under supervision of the Association's Committees on Domestic Gas Research and Industrial Gas Research. The most recent problem assigned to the laboratories is an extensive investigation of summer gas air conditioning equipment under supervision of the Joint Committee on Summer Air Conditioning. Visitors were shown the various appliances already assembled at the laboratories for this work, two of which were in operation. It is confidently expected that completion of this project will make available to the industry much valuable engineering and economic data on the design and application of such equipment, with a resultant increase in summer gas load.

■ ■

Pennsylvania Association

George S. Hawley, president of the Bridgeport Gas Light Co., Bridgeport, Conn., and vice president of the American Gas Association, was one of the principal speakers at the 33rd annual meeting of the Pennsylvania Gas Association held in Skytop, Pa., May 12-14, which was attended by 400 delegates.

Among the new problems mentioned by Mr. Hawley were: More rigid state and Federal regulation, how to increase the use of gas per family unit, competition from new sources, and increased responsibilities in connection with the national defense program.

P. T. Dashiell, vice president in charge of production, The Philadelphia Gas Works Co., Philadelphia, Pa., was elected president for the 1941-1942 term, succeeding M. A. Boylan of Scranton, Pa. Other new officers are: Vice presidents, F. W. Lesley, York, Pa.; Blackwell Newhall, Philadelphia, Pa.; E. G. Boyer, Philadelphia; secretary, William Naile, Lebanon, Pa.; treasurer, W. G. Sterrett, Jenkintown, Pa.

In his opening report to the convention, President Boylan stated that gas sales to Pennsylvania customers increased appreciably during 1940, closely following national averages. John F. Davis of Reading, Pa., speaking at the same session, stressed the importance of national solidarity.

Prominent speakers at the business sessions included A. W. Johnston, Jr., The Hartford Gas Co.; R. C. Holcombe, The Philadelphia Gas Works Co.; E. J. H. Flexer, Allentown-Bethlehem Gas Co; R. D. Jones, Consumers Gas Co.; George E. Webber, Public Service Electric and Gas Co.; Dr. R. B. Mitchell, University of Pennsylvania; J. Edward Brewer, consulting chemist of Philadelphia; W. G. Murfit, The Philadelphia Gas Works Co.; Lyle C. Harvey, Bryant Heater Co.; George S. Jones, Jr., Servel, Inc.; and L. F. Demmler, Ketchum, MacLeod & Grove, Inc.

At the Western Metal Exposition and Congress, held in Los Angeles in May, prominent exhibitors were gas industry heating and air-conditioning equipment manufacturers. Above is seen the General Gas Light Co. exhibit. Pacific Gas Radiator Co. and Payne Furnace & Supply Co. also participated in this display.

L. P. G. A. Convention

The Pacific Coast Section of the Liquefied Petroleum Gas Association held its Second Annual Convention and Exposition June 9-10 at the Fairmont Hotel in San Francisco. More than 350 members and guests registered at the convention headquarters.

Pacific Coast Vice Chairman R. A. Hansen presided. Charles E. McCartney, Pacific Coast chairman, opened the meeting with a welcome to the group. Topic of discussion by George W. Bach president, L. P. G. A., was "The Liquefied Petroleum Gas Association and Its Relation to the LP-Gas Industry." Ellsworth L. Mills, vice president, L. P. G. A., discussed the present status of the Association, explaining that various sections throughout the country work closely with the national headquarters of the organization.

E. C. Sorby, promotion director, Geo. D. Roper Corp. gave a talk and stage demonstration designed primarily for appliance salesmen. Mr. Sorby explained vital points in the art of selling. The title of his talk was "Sell the Bloom of the Rose, Not Its Seed."

C. L. Parkhill of Parkhill-Wade presented "A Survey of LP-Gas as Fuel for Internal Combustion Engines." He illustrated his talk with slides that showed in detail the growing use of butane and propane as engine fuels and indicated the huge market of commercial vehicles and farm equipment as yet hardly touched by LP-Gas conversions. M. B. Anfenger and Dr. O. W. Johnson, Standard Oil Co. of Calif., presented again their demonstration platform and paper on "The Physical Properties of LP-Gases."

■ ■

Western Metal Exposition

The Western Metal Exposition and Congress was held for five days in the Pan-Pacific Auditorium, Los Angeles, in May, with a total attendance in excess of 39,000. This is the third time the Association has met in the city of Los Angeles.

Technical sessions, which were concentrated on the metal industry's cooperation in the national defense program, were attended by more than 6000 engineers and technicians from all over the United States.

The American Gas Association, Pacific Coast Gas Association and the Natural Gas Bureau of Los Angeles participated jointly in the Exposition. Space purchased by these organizations was allotted to firms manufacturing, distributing and selling metal heat treating equipment and air conditioning appliances in the West.

■ ■

Metropolitan House Heating

A joint meeting of the Metropolitan House Heating and Air Conditioning Council and the industrial division of the New England Gas Association was held at the Algonquin Club, Bridgeport, Conn., on May 21.

Preceding the luncheon meeting, the council held a regular business meeting and election of officers with Chairman Brezee presiding. New officers elected for 1941-42 were: chairman, Henry Rohrs, Elizabethtown Consolidated Gas Co., Elizabeth, N. J.; vice chairman, William B. Hewson, Brooklyn Union Gas Co., Brooklyn, N. Y.; secretary-treasurer, Warren F. Ward, Rockland Light & Power Co., Middletown, N. Y.

The luncheon meeting was presided over by George S. Hawley president of the Bridgeport Gas Light Co., who welcomed both groups to Bridgeport. After the luncheon, the first guest speaker was A. C. Bredahl, who gave a very interesting paper entitled "The Part Gas Utilities Should Play in Defense and Low Cost Housing," which was a great deal of help to all gas companies whose territory plans Defense Housing. Mr. Bredahl is chief of the Mechanical & Utilities Section, United States Housing Authority, Washington, D. C.

Next speaker was Frank H. Trembly, Jr., assistant sales manager, The Philadelphia Gas Works Co., whose paper "Symposium on Defense and Low Cost Housing," gave an outline of the work done by his company in securing gas cooking, water heating, refrigeration and space heating in both Low Cost and Defense Housing projects in Philadelphia. B. H. Dingley, Jr., manager Appliance Sales, The Hartford Gas Co., gave a report on his experiences dealing with the local Defense Committee in Hartford and the United States Defense Authority in Washington, in reference to securing gas cooking and water heating on important Defense Housing projects now under construction in Hartford.

The joint chairmen of the Program Committee for the affair were Walter D. McCrea of the Cambridge Gas Light Co., Cambridge,

Delegates to the Distribution Conference held in Pittsburgh recently were escorted through the Pittsburgh Equitable Meter Co. plant by company guides. The group shown here is watching the assembly of Balanced Valve Regulators.

Mass., and Henry Rohrs of the Elizabethtown Consolidated Gas Co., Elizabeth, N. J. Much of the credit for the success of the committee is due to Ronald A. Malony, sales manager, The Bridgeport Gas Light Co., who made arrangements for the place of meeting and the food which was put before the group.

■ ■

Heating Plant Convention

During the week of June 16, some 2000 heating, piping and air conditioning contractors and approximately 600 air conditioning engineers, met in San Francisco, and for five days studied the problems of their industry. The meetings were held under the auspices of the Heating Piping and Air Conditioning Contractors National Association and the American Society of Heating and Ventilating Engineers.

Among those attending the opening sessions of the two groups were J. E. McNevin of Denver, national president of the contractors; George H. Dickerson, of Chicago, past president of the group, and Daniel Hayes, San Francisco president of the local chapter of the contractors. An exhibit of equipment, worth $250 000, was on display at the Civic Auditorium, including many new devices, such as special masks, hand guards and the like to be worn by men in certain hazardous jobs. Also glass pumps, immune to certain acids, spun glass insulators, and huge air conditioning machinery now installed in large factories.

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S. C. M. A. Elections

At the annual "Low Jinks" meeting of the Southern California Meter Association, held at the Rio Hondo Country Club, Los Angeles, June 19, committee chairmen and officers were elected for the coming year.

W. H. Williams, O. C. Field Co., was elected president, succeeding M. J. Cereghino of the Southern California Gas Co. W. L. Cowan, Union Oil Co., was elected vice president. R. T. Furlong, The Texas Co., was elected treasurer, and Gordon S. Duncan, General Petroleum Corp., secretary.

Committee chairmen and their committees are: George L. Bruno, Southern Counties Gas Co., membership; E. M. Cloran, Pittsburgh Meter Co., publicity; W. A. Spencer, Southern Counties Gas Co., by-laws; C. L. Hutchins, Tidewater Association Oil Co., standards; L. W. Wilbern, Daniel Orifice Fitting, entertainment; and L. P. W. Des Brisay, Southern California Gas Co., program. One hundred and fifty persons attended the meeting.

CALENDAR

July

Michigan Gas Association—Grand Hotel, Mackinac Island, Mich., June 30, July 1 and 2.

Home Service Conference—Syracuse University, Syracuse, N. Y., July 7 and 8.

August

Appalachian Gas Measurement Short Course—Campus, University of West Virginia August 18-20.

September

Mid-West Gas School and Conference—Ames, Iowa, September 8-10.

Pacific Coast Gas Association — Annual Convention, Del Monte, Calif., September 10-12.

Empire State Gas and Electric Association—Saranac Inn, Saranac, N. Y., September 11-12

American Trade Association Executives—Hershey, Pa., September 11-13.

October

West Virginia Oil and Natural Gas Association — Annual Convention, Clarksburg, W. Va., October 2-3.

American Gas Association — 23rd Annual Convention, Atlantic City, N. J., October 20, 21 and 22, 1941.

November

Mid-Southeastern Gas Association, Annual Meeting, and Institute for Gas Plant Operators—State College, Raleigh, N. C., November 13-14.

S. G. M. Short Course

The next regular meeting of the general committee of the Southwestern Gas Measurement Short Course will be held in November, according to Miss Kate A. Niblack, secretary of the Oklahoma Utilities Association. At that meeting Max K. Watson, Canadian River Gas Co., Amarillo, Texas, newly elected chairman of the program committee, will outline plans for the program for the 1942 short course. G. W. McCullough, Bartlesville, Okla., the new general committee chairman, will preside. E. C. McAninch, Oklahoma Natural Gas Co., Tulsa, Okla., was chosen 1942 chairman of the practical methods committee.

At a class on "Operating and Maintenance Wrinkles for Metermen," held during the 1941 short course, several gas men were given honorable mention for "new wrinkles" devised and applied during 1940. These included: Charles Fuqua, Consolidated Gas Utilities Corp., Cushing, Okla., adjustable caps for testing domestic meters; L. F. Carter, Colorado Interstate Natural Gas Co., Colorado Springs, Colo., pulsation dampener for pressure gage; and J. L. Whipkey, Canadian River Gas Co., Channing, Texas, socket wrench for orifice meter.

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Wisconsin Utilities Officers

Acting upon the recommendations of the general nominating committee, the active members of the Wisconsin Utilities Association in a vote by mail recently unanimously elected the following officers: president, Lawrence F. Seybold, vice president, Edward R. Felber, and treasurer, Louis T. Smith.

Mr. Seybold, who succeeds A. P. Gale as president of the Association, is a director and vice president of the Wisconsin Electric Power Co., The Milwaukee Electric Railway & Transport Co., Wisconsin Gas and Electric Co., and the Wisconsin Michigan Power Co.

Mr. Felbert is vice president and sales manager of the Madison Gas and Electric Co. Mr. Smith is secretary-treasurer of the Milwaukee Gas Light Co. This will be his second term as Association treasurer. The newly-elected officers took office with the beginning of the Association fiscal year on May 1, 1941.

■ ■

Florida-Georgia Gas Ass'n

Ted Bergman, Miami, was elected president of the Florida-George Gas Meters association, at the sixth annual convention in the Hollywood Beach hotel. Another Miamian, C. D. Littlefield, was elected vice president. H. Stuart Johnson of Orlando was re-elected secretary-treasurer.

Directors elected in the meeting were J. C. Hutchinson, of Tampa; W. J. Pomar of St. Augustine; W. D. McVey of Eustis; O. F. Keune of Miami; F. L. Linzer of Savannah, Ga.; I. M. Wynn of Gainesville, Fla.; J. W. Perkerson of St. Petersburg, and W. P. Woods of West Palm Beach.

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P. C. G. A. Committee Named

The Nominating Committee of the Pacific Coast Gas Association is made up of the following: H. L. Farrar, Coast Counties Gas and Electric Co., chairman; F. S. Wade, Southern Counties Gas Co.; John Keillor, B. C. Electric Ry. Co.; C. A. Miller, Servel, Inc.; W. J. Bailey, Day and Night Water Heater Co.

Plans for the forthcoming Annual Convention to be held September 10-12 at Del Monte, Calif., are being formulated under the direction of the Association's president, R. A. Hornby, and Managing Director Clifford Johnstone.

who doesn't come . . .

You may not find folks waiting at windows . . . but more people than ever before in your community are ready to listen to your story if it's about Gas Refrigeration. They've read tons of advertising why Servel Electrolux can give them advantages they can get in no other make. They'd like to have your salesmen tell them more about it.

Local surveys you yourself can make will corroborate what nationwide studies have shown: more and more people in both the replacement and new user markets are choosing the Gas Refrigerator because they recognize that the reasons why it's different—are also the reasons why it's better.

Retelling Fundamental Story Gets Results

Servel's advertising policy of sticking to the story of basic differences for the last fourteen years has been a helpful factor in this growing trend . . . a trend that represents a tremendous opportunity for everyone who sells Gas Refrigeration.

To help your Gas Company take fullest possible advantage of this opportunity in 1941, this year's advertising is continuing the proven story in fresh dress: "Servel Stays Silent . . . Lasts Longer—because it Freezes with No Moving Parts."

Parallel Local Effort Helps Gas Companies

You have everything to gain from tying up with this theme as extensively as possible in your local newspaper, outdoor, radio and direct mail advertising. For by making sure every member of your community gets this message, you'll be bound to sell more Gas Refrigerators.

In addition to your direct merchandising profits . . . you'll protect your present gas load, build new load without increasing your investment, stimulate the sale of other gas appliances, publicize the modernity of gas and promote "Gas for All Four Jobs."

Wins good will for gas and gas service

Michigan Cities May Get Natural Gas

AUTHORIZATION to proceed with a plan for supplying 66 Michigan communities with Texas natural gas was asked of the Michigan Public Service Commission recently by the Consumers Power Co., Jackson, Mich.

The company has contracted with the Panhandle Eastern Pipe Line Co., Kansas City, Mo., for sufficient natural gas to meet the needs of almost all communities in its service area now supplied with manufactured gas, the announcement said.

In its petition to the Commission, Consumers Power Co. asked permission to serve the 66 communities with natural gas instead of manufactured gas. It asked that a uniform rate be established for all communities involved, "such rate to be temporary in nature and to be subject to revision as the business develops."

Under the contract, Panhandle Eastern will build transmission lines connecting the Texas Panhandle to Detroit pipe line with the points of distribution. One line will run north from the Michigan-Ohio border to a point eight miles west of Saginaw. A branch will connect with Consumers Royal Oak gas plant. Another line will run west to Kalamazoo through Jackson and Marshall.

The plan of using Michigan and Texas gas in combination to meet the requirements of such industrial centers as Pontiac, Flint, Jackson and Kalamazoo was first advanced by Charles S. Porritt while he was serving as a member of the Public Service Commission in 1937.

Chairman John P. O'Hara and other members of the Public Utilities Commission have taken interest in the plan and have held several conferences with gas experts and city officials for the purpose of speeding natural gas service to Michigan industrial areas. Impetus has been given to the negotiations by the interest of the Cities Alliance, a group of city officials of which W. P. Edmondson, city manager of Pontiac, is chairman. Others in this group who have been particularly active are Orph C. Holes, city attorney of Ferndale, and city managers Jay F. Gibbs, Ferndale; Edward M. Shafter, Royal Oak, and Clarence Elliott, Plymouth.

Communities which would receive natural gas under the plan are Flint, Pontiac, Jackson, Kalamazoo, Owesso, Royal Oak, Mt. Clemens, Birmingham Ferndale, Marshall, Clio, Davision, Grand Blanc, Lapeer, Corunna, Durand, St. Johns, Flushing, Fenton, Linden, Mt. Morris, Pine Run, Almont, Dryden, Imlay City, Holly, Ortonville, Capac, Ovid, Pleasant Ridge, Huntington Woods, Farmington, Bloomfield Hills, Berkley, Center Line, East Detroit, Utica, Plymouth, Clarkston, Clawson, Lake Angelus, Lake Orion, Oak Park, Orchard Lake, Oxford, Rochester, Sylvan Lake, Fraser, Roseville, St. Clair Shores, Warren, Northville, Wayne, Vandercook Lake, Michigan Center, Glaser, Parchment, Schoolcraft, Vicksburg, Bangor, Decator, Hartford, Lawrence, Lawton, Paw Paw, and Galesburg.

A trip to Hollywood proved a high point to 17-year-old Mae Lee Dow of Grand Rapids, Mich., grand national prize winner in the high school food project sponsored by Servel, Inc. From left to right: Lucille Hall, home economics director of Michigan Consolidated Gas Co., Grand Rapids; movie star Lionel Barrymore; Miss Dow and Carmen Mains, Grand Rapids home economics teacher. As winner of the contest, Miss Dow received not only the all-expense trip to and from California, but also a $100 college scholarship and a Servel Electrolux refrigerator for her high school's home economics laboratory.

Oklahoma Natural Gas Co. Plans $4,700,000 Merger

THE Oklahoma Natural Gas Co., Tulsa, is planning to purchase the properties of the Central States Power and Light Co., a transaction that will involve $4,700,000. This was approved by the Federal Securities Commission recently.

The systems of the company will be taken over intact and former operations of properties will continue over the present area of more than 20 cities of the state. The communities affected include: Henryetta, Wetumka, Pawnee, Stillwater, Oilton, Jennings, Quinton, Stigler, Erick, Carter, Elk City, Cordell, Clinton, Centinel, Rocky, Dill City, Bessie, Hobart, Lone Wolf, Okemah and Holdenville Okla.

Involved in the transaction, expected to be completed by July 1, are 10 gas distribution systems. Of these 10 systems, one in the western section of the state serves 18,500 customers.

When the new properties are added to the Oklahoma Natural system, the company will be serving about 90 Oklahoma cities. It employs nearly 1000 persons in the 70 cities now served with natural gas.

Gas Plant to Produce Ammonium Thiocyanate

Large scale production of ammonium thiocyanate is now under way at the Everett, Mass., plant of the Eastern Gas and Fuel Associates, it is announced by Fred Denig, vice president of the Koppers Co., in charge of the research department. The plant is built to produce both crystals and 30% liquor. The grade of crystals now under production has a purity in excess of 95%.

The chemical is being produced in connection with coke plant operations from constituents of manufactured gas. The production of the plant will be marketed by the Tar and Chemical division of the Koppers Co., Pittsburgh, Pa.

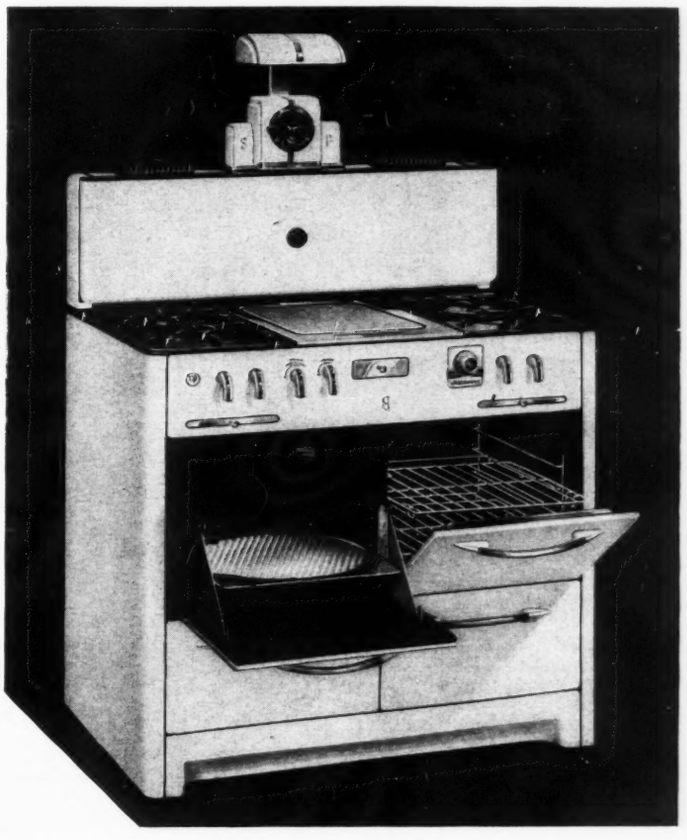
Large Gas Main to Supply Remington Arms Factory

A large gas main from Independence, Mo., to the Lake City ammunition plant is to be constructed in order to furnish gas for the Remington Arms Corp.

The flow to the plant will be from the east side for the most part along the road. Hundreds of men will be placed to hasten the pipe laying.

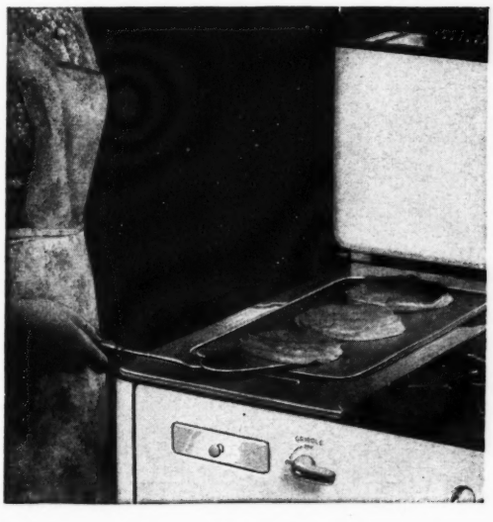
WEDGEWOOD'S *Built-In*
TOP GRIDDLE and WARMER

- ★ Ideal for Hot-Cakes and Frying
- ★ Keeps Plates Warm and Foods Hot
- ★ No Hunting of Special Utensils Saves Many Steps
- ★ Grease Drains Into Removable Drawer
- ★ Burner Is Self-Lighting
- ★ Reflector Plate Permits Convenient Flame Adjustment



another outstanding ★ WEDGEWOOD feature

CP Model 6385 includes Top Griddle - High Broiler - Divided Top - WEDGEWOOD'S heavily cast Top Griddle and Warmer with durable chrome finish, insures clean, convenient, lasting satisfaction, and lifetime service.



Gas THE MODERN FUEL

WEDGEWOOD GAS RANGES MAKE NEW FRIENDS FOR GAS

WEDGEWOOD

***The* MODERN GAS RANGE**

JAMES GRAHAM MANUFACTURING CO.

Los Angeles • San Francisco • Newark, Calif. • Portland, Ore.

INDUSTRY *Personalities*

• After almost half a century of continuous service in the natural gas industry, **Charles E. Gallagher** retired from his position as chairman of the East Ohio Gas Co., Cleveland, on May 14, just one day before his 65th birthday.

C. E. GALLAGHER

J. French Robinson, new president of the company, will assume the duties of Mr. Gallagher. Mr. Robinson was named president last November at which time Mr. Gallagher became chairman of the board.

East Ohio is a subsidiary of Standard Oil Co. of New Jersey and it is a rule of the parent company that all executives retire at 65.

Mr. Gallagher entered the gas business in 1893 as a telephone operator for the Mountain State Gas Co., Parkersburg, W. Va., and joined East Ohio Gas Co. as a clerk in 1899 at Akron, Ohio. In 1926 he was transferred to Cleveland as general superintendent, later being promoted to vice president, succeeding his brother, **Ralph W. Gallagher,** who had been promoted to the vice presidency of the Standard Oil Co. The Gallagher brothers started with the East Ohio Gas Co. in the same year and worked side by side for more than 30 years.

One of the retiring chairman's greatest achievements was the development last year of the company's now famous liquefied petroleum gas plant on the lake front near Cleveland. The plant, being the first of its type ever constructed, has attracted nationwide attention.

• **George S. Hawley,** president of the Bridgeport Gas Light Co., Bridgeport, Conn., and vice president of the American Gas Association, was elected vice president of the Chamber of Commerce of the United States, representing the Northeastern Division, at the 29th annual meeting of the Chamber in Washington, D. C., April 29-May 1.

James F. Owens, Oklahoma Gas and Electric Co., Oklahoma City, Okla., was named vice president of the national Chamber representing the Southwestern Division.

Thomas J. Strickler, vice president and general manager, Kansas City Gas Co., Kansas City, Mo., and president of the American Gas Association, is a director of the national Chamber of Commerce.

• **Herbert G. Schaul,** formerly manager of the house heating division of the Westchester Lighting Co., Mt. Vernon, N. Y., has been promoted to the office of executive assistant to the general superintendent of the customers' service department. **James E. Cook,** manager of the architects' and builders' division, has succeeded Mr. Schaul as manager of the house heating division which also includes the architects' and builders' division.

• **Frank R. Phillips,** president of the Philadelphia Co., and subsidiary companies of Pittsburgh, Pa., has announced the appointment of **Walter H. Arras** as general purchasing agent for the Philadelphia Co. and subsidiary companies, succeeding **C. W. Lepper,** retired, effective June 1.

Mr. Arras, a native Pittsburgher, entered the employ of the company on April 20, 1900, as a stenographer. He served in various capacities, and in 1918 became assistant general purchasing agent, which position he has held since that time.

Announcement was also made of the appointment of **Russell C. Wenz** as assistant general purchasing agent, succeeding Mr. Arras.

• **Rudolph E. Burger,** formerly vice president and general manager of the Cities Service Power and Light Co., Jersey City, N. J., was elected to the presidency of that company recently.

• **Albert E. Madden,** district manager of the Southern Counties Gas Co., Rosemead, Calif., was recently appointed manager of a newly created San Gabriel Valley District by the company's vice president and general manager, **A. F. Bridge.**

The new district includes the communities of Monrovia, Duarte, Arcadia, El Monte, Sierra Madre, Rosemead, Temple City, Whittier, La Habra and Montebello, Calif.

H. W. Keiser, superintendent of the distribution department, will have general supervision of the operating department. He will be assisted by **Frank L. Pargee** and **R. W. Gregory.**

• **J. Ben Boston,** who has been an employee of the United Gas Corp. since 1935 has been appointed local manager of the Lufkin, Texas, office of the company, according to an announcement made by **G. L. Taylor,** district manager of the concern.

Mr. Boston began work for the company in the Childress office and was transferred a year later to the Henderson office. He was then promoted to district salesman for the Jacksonville office and held this position until his recent promotion.

J. H. Quick, Jr., has been promoted to district salesman for the United Gas Corp., Jacksonville, Texas, having formerly been assistant district chief clerk with the company for several months. Mr. Quick succeeds to the position held by Mr. Boston.

• **Edward P. Russell,** Memphis, Tenn., attorney, has been elected a director of the Memphis Natural Gas Co., Memphis, Tenn. Announcement was made by **Birger L. Johnson,** president of the company.

• Stockholders of the Memphis Natural Gas Co., at their recent annual meeting in Dover, Del., re-elected **Milton S. Binswanger** chairman of the board, and **Birger L. Johnson** and **Harold P. Farrington,** directors. **T. A. McEachern, Jr.,** was elected to a vacancy on the board. Mr. Binswanger is president of The Binswanger Glass Co., Memphis, Tenn., and Mr. Johnson is president of the Natural Gas Co., also of Memphis. Mr. McEachern is associated with the Commonwealth Gas Co., New York.

• **C. P. Rather,** president of the Southern Natural Gas Co., Birmingham, Ala., has been chosen to direct the 19th annual Community Chest appeal next fall in behalf of the 35 social service agencies of Birmingham and Jefferson county. Mr. Rather has been president of the Southern Natural Gas Co. for the last five years.

• **R. S. Collings,** formerly district manager of the United Gas Corp., Crowley, La., has been appointed district manager of the New Iberia district, succeeding **E. M. Cannon, Jr.** Mr. Cannon has been promoted to the management of the company's Lake Charles

Four of the principal figures in the promotion of the CP Gas Range Program, at the luncheon given in the Hotel Biltmore, New York City, by the Association of Gas Appliance and Equipment Manufacturers. Left to right: John E. Bogan, sales promotion manager, A.G.A.E.M. Domestic Gas Range Division; George L. Scofield, chairman, A.G.A. Domestic Range Division; Lloyd C. Ginn, chairman, A.G.A.E.M. CP Sales Management Committee and sales promotion manager, American Stove Co.; and John W. West, Jr., secretary, A.G.A. Residential Section.

district, according to an announcement made by **M. A. Voorhies,** division superintendent. Mr. Cannon succeeds **P. H. Chaffin,** who has been transferred to Crowley as district manager.

These changes in management of the Southwest Louisiana districts of the company were brought about by the illness of Mr. Chaffin.

• Announcement was made by **John A. Clark,** vice president of the Public Service Co. of New Jersey, of the promotion of **Fred E. Hunt** and **Harry W. Swartz.** Mr. Hunt, who started with the company in 1923 as an engineer's clerk, was promoted to chief clerk to the division manager in 1934. His new duties will be that of division storekeeper. He succeeds **Harry R. Bouton,** who passed away in April of this year. Mr. Swartz began work for the company in 1925 and has spent most of his time as clerk in the storekeeper's office. Mr. Swartz is now chief clerk to the division engineer.

• **William K. Harbaugh,** bookkeeper in the chief accountant's department of the Electric and Gas Co., Newark, N. J., retired on a pension June 1 after 41 years with the Public Service Companies of New Jersey. His first work in the industry was for the South Jersey Gas, Electric, and Traction Co., Camden, N. J., in 1900. He was presented a purse by fellow-workers May 29, the presentation being made by **Franklyn Heydecke,** general auditor.

• **L. M. Klauber** was elected vice president and general manager of the San Diego Gas & Electric Co., San Diego, Calif., at the annual meeting of the stockholders of the company, April 22. **W. F. Raber** was re-elected president of the company and **H. R. Peckham** was elected to succeed Mr. Klauber as vice president in charge of operation at the same meeting. On April 24, **E. D. Sherwin** was advanced to the position of general superintendent, which was formerly held by Mr. Peckham.

L. M. KLAUBER

Mr. Klauber has been with the company since 1911. During the last 30 years he has been a salesman in the commercial department, engineer in charge of the record department, superintendent of the electric department, assistant general superintendent, vice president and general superintendent, and vice president in charge of operation, in that order.

Mr. Peckham joined the company in 1912 in the record department. After service in the World War, he worked for the Tacoma Gas Co., Tacoma, Wash., as assistant general superintendent. In 1921 he returned to the company as assistant general superintendent and in 1932 became general superintendent.

Mr. Sherwin worked in the record department of the company before he graduated from Stanford University in 1917. After the war, in 1920, he returned to the company as a surveyor. In 1922 he became assistant superintendent of electric distribution and after two years was promoted to assistant superintendent of electric production. He became assistant general superintendent in 1932.

• The Puget Sound Power & Light Co., Seattle, Wash., has announced the promotion of three of its employees. These men are: **Russell Peterson, Houghton Whithed** and **Edwin Whiting.** Mr. Peterson, who joined the company in 1924 as supervisor of the printing and stationery bureau was advanced to credit manager and his recent promotion is to assistant treasurer of the central division. Mr. Whithed, a graduate of the Massachusetts Institute of Technology with an electrical engineering degree, joined the company in 1913 as a meter tester. He is now credit supervisor of the central accounting division. Mr. Whiting began work for the company in 1929 as an appliance installer. He is now adjustment supervisor of the central accounting department.

• **D. E. Conaway,** chief geologist of the United Natural Gas Co., Oil City, Pa., has accepted employment as geologist for the Pennsylvania Gas Co., Warren, Pa. He is succeeded at the Oil City post by **D. T. Secor,** who has served as assistant geologist since 1935, being previously employed as an engineer for the company since 1928. Mr. Conaway, a graduate of West Virginia University, was previously employed by the Peoples Natural Gas Co. and the Blum-Weldin Engineering Co., both of Pittsburgh, Pa., before entering the employ of the United Natural Gas Co. in 1923. He was named chief geologist in 1939.

• At a recent meeting of the board of directors of the Vulcan Proofing Co., Brooklyn, N. Y., **Joseph Cameron Dunn,** formerly the company's general sales manager, was elected vice president. Mr. Dunn will continue in direct charge of the sales department.

Born in Troy, N. Y., Mr. Dunn was graduated by Rensselaer Polytechnic Institute in 1915. His first job after leaving school was with E. I. duPont de Nemours. Later, in 1923, he became associated with the Vulcan Proofing Co., where he has continued for 18 years, first in an advisory capacity, in connection with the manufacturing departments, then in the sales departments, then general sales manager, and now vice president.

• **Betty Boyle,** who has been home service director of the Gas Service Co., Kansas City, Mo., for the past 13 years, on July 1 will become home service director of the Wyandotte County Gas Co., Kansas City, Kan. Miss Boyle will take the place of **Mrs. Mildred Rittenhouse,** who has been home service director for the Wyandotte company for a number of years. Mrs. Rittenhouse recently resigned from the company to enter her own business.

• **Walter A. Hart,** Pacific Coast manager of the General Gas Light Co., has announced that **Alvin R. Bravender** has been appointed representative of the company for the states of Oregon, Washington, and Idaho. His headquarters will be in the Security Bldg., Portland, Ore.

• **E. L. Henderson,** chief engineer for the United Gas Corp., Houston, Texas, was recently elected president of the Houston Engineers Club. He succeeds **R. M. Hutchison** of the Houston Natural Gas Corp. The new president has been with the United Gas Corp. 10 years, joining the company as district engineer. He was promoted to chief engineer in 1937.

• **W. O. Harden,** bookkeeper for the Southwestern Gas and Electric Co., Atlanta, Texas, has been promoted to the position of local manager, according to an announcement made by **W. E. Bann,** vice president and division manager of the company.

Mr. Harden succeeds **E. C. Blandford,** who has been transferred to Mineola, Texas, as local manager for the company in that city.

JAMES W. VAIDEN

• **James W. Vaiden,** manager of the natural gasoline and natural gas department of the Skelly Oil Co., Tulsa, Okla., was elected vice president of the company in charge of manufacturing at a recent meeting of the board of directors. He will have executive supervision over the natural gasoline and natural gas departments and of the company's refinery which is located at El Dorado, Kan.

• **Curtis Fitzpatrick** is now claim agent for the San Diego Gas & Electric Co., San Diego, Calif., replacing **D. K. Adams,** who had held that position since June, 1915, and has now retired. Mr. Fitzpatrick has been with the company since 1917, working most of the time in the record department. He was a special investigator and claim agent during the gas changeover in 1932.

• **L. T. Potter,** former chief production engineer for the Lone Star Gas Co., Dallas, Texas, has been named superintendent of the Production Department. **E. A. Brown,** former assistant chief production engineer for the company, has been appointed chief production engineer. Mr. Potter has been with the company since 1928. Mr. Brown joined the company as office production engineer in 1932.

• **H. C. Davis,** salesman for the Handley district of the Community Natural Gas Co., Dallas, Texas, has been named dealer sales supervisor in the Abilene division, according to **Carl L. Trevitt,** merchandise manager for the company. Mr. Davis replaces **Charles Lockhart, Jr.,** who has enlisted in the Army. Mr. Lockhart is stationed at Fort Bliss, El Paso, Texas.

Mr. Davis began work for the company in the Corsicana district as a merchandise salesman in 1936 and served in the same capacity in the Cleburne, Mexia, and Handley districts before receiving his present appointment on April 16.

• **Ben R. Newbery,** Lone Star Gas Co. purchasing agent, was installed as vice president at the National Association of Purchasing Agents at the meeting of the Dallas association held April 24. Mr. Newbery's duties will cover activities in Dallas, Fort Worth, Houston, Oklahoma City, Tulsa, and Tampico, Mexico. Mr. Newbery has been with the Lone Star company since 1915, serving as a stenographer and later as an inventory clerk.

• **Harry W. Smith, Jr.,** formerly director of industrial publicity for the American Gas Association, will join The Selas Co., Philadelphia, Pa., on July 1. He will handle news, display advertising, and promotion for that company.

• **S. M. Sharp,** for the past six years electrical superintendent for the Southwestern Gas & Electric Co., Shreveport, La., has been promoted to the position of chief engineer of the company, succeeding **Andrew Patterson,** deceased, according to an announcement

made by **A. Lieberman,** president of the company.

Coming to the Shreveport office as division engineer in 1932, Mr. Sharp was made superintendent in 1935, and held this position until his recent advancement. Mr. Sharp is a graduate of the University of Arkansas.

D. D. COUCH

• **Donald D. Couch,** Pittsburgh, Pa., was appointed vice president of the American Radiator & Standard Sanitary Corp. at a recent meeting of the board of directors of the company held in New York. Mr. Couch entered the employ of the Standard Sanitary Mfg. Co. in 1925 and was an employe of the company when it was later consolidated into the American Radiator & Standard Sanitary Corp.

First employed as a traveling auditor, Mr. Couch was transferred to the general sales department in 1928. In 1930 he became manager of the quotation department and in 1935 was appointed assistant to the general manager of sales. He is a graduate of the University of Pittsburgh.

• **R. M. Cleveland,** of the Worthington Pump and Machinery Corp., Harrison, N. J., has recently been appointed manager of the Boston, Mass., division of the organization. Mr. Cleveland, who has been with the company 24 years, succeeds **W. A. Finn,** who has been called to active duty with the Navy in the rank of lieutenant. Mr. Finn has been with the Worthington corporation since resigning his commission as a Naval officer 15 years ago.

• **John J. Kelly,** foreman in charge of automobiles, and **Martin J. White,** assistant division engineer of distribution, Hudson Division, of the Public Service Electric & Gas Co., Jersey City, N. J., were honored at a dinner attended by 250 fellow-workers, June 5, in Union City, N. J.

Mr. Kelly, who has served the company for the last 57 years, was retired on June 24. His record of continuous service to the company has been equaled by only one man and surpassed by none in the entire history of the company. He began work as a stable boy for the Jersey City Gas Light Co. at the age of 13 and when horses were replaced by automobiles, was put in charge of the garage.

Mr. White completed 25 years of service in the gas department on June 8. He was presented with a gold service badge by **John A. Clark,** vice president of the company, and a radio, by **Harry Ellis,** assistant general superintendent of gas distribution, on behalf of his fellow-workers. **Martin C. Timmerman,** chief clerk, accepted a watch on behalf of Mr. Kelly, who was unable to attend the dinner because of illness.

o **A. L. Ward,** manager of the chemical laboratory of the United Gas Improvement Co., Philadelphia, Pa., has been honored by Syracuse University, which conferred upon him the degree of Doctor of Science at the annual commencement exercises at Syracuse, N. Y., recently. Mr. Ward was graduated from Syracuse University in 1914 with the degree of Bachelor of Science in Chemistry and received his Master of Science degree from the same institution in 1915. Soon after graduation, Mr. Ward became an employee of the E. I. duPont de Nemours Co. in 1915 and stayed there five years. He became connected with the United Gas Improvement Co. in 1920 and has been manager of the chemical laboratory of the company since 1934. He is a member of the American Gas Association and serves on the Chemical Committee of that organization.

• **Albert N. Woodhead** was elected a vice president of the New York Power and Light Corp. at a meeting of the board of directors held at Albany, N. Y., April 29. This announcement was made by **Otto Snyder,** president, and follows closely Mr. Woodhead's election as a director of the corporation at the stockholders' meeting held April 17.

Mr. Woodhead has been associated with the company since 1926 when he went to Albany and soon after became assistant secretary. In that capacity he directed the company's advertising and publicity programs as well as matters concerning public relations. He will continue to supervise these activities in his new official capacity, Mr. Snyder stated.

• **C. I. Weaver,** Springfield, Ohio, was reelected president of the Ohio Fuel Gas Co., at the firm's annual meeting in Columbus, Ohio. **E. M. Tharp,** Columbus, was elected vice president and general manager.

Other officers include: **E. D. Bivens,** now associated with the Columbia Gas & Electric Corp., parent organization, assistant treasurer and a director of the company; **T. H. Kerr, W. L. McCloy** and **Paul S. Clapp,** vice presidents; **P. A. Alberty,** secretary; **W. N. Grinstead,** treasurer and assistant secretary; **H. C. Lytle,** assistant secretary, and **C. L. Langenberg,** assistant treasurer.

• **W. G. Barks, Jr.,** head of the customers' department of the Southern Counties Gas Co., Pomona, Calif., for the last five years, has been transferred to Monrovia, Calif., according to an announcement made by **Homer R. Mead,** district manager of the company.

Mr. Barks will be succeeded by **George C. Coates,** who is being transferred from the Monrovia office of the company.

• **W. D. Zellman** has been appointed sales manager of the New Business Department of Laclede Power & Light Co., St. Louis. Mr. Zellman, who succeeds the late C. G. Murdoch, joined the Laclede organization 17 years ago as an industrial power salesman. After receiving a B. S. degree from Purdue University, Mr. Zellman was employed for three years by the Utah Power and Light Co., Salt Lake City, Utah. He was a Second Lieutenant in World War I.

• **Homer Hanson,** former manager of the United Gas Corp., Hondo, Texas, has been transferred to Floresville, Texas, as manager of that office of the firm. Mr. Hanson succeeds **W. C. Lokey,** who recently resigned in order to accept a position as senior gas foreman at Camp Hulen, Palacios, Texas. Mr. Lokey was with the Kenedy, Texas, office of the company before he came to Floresville several years ago.

o **L. M. Little,** manager of the Fairbury, Neb., office of the People's Natural Gas Co. for the past six years, retired on July 1.

Mr. Little has been with the company since April 1, 1935, serving as manager the entire period. Before he came to Fairbury, Mr. Little was associated with the Nebraska Natural Gas Co., Lincoln, Neb. **Frank Keeline** is the new manager of the company.

TITAN

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for
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2. PERFORMANCE
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TITAN WATER HEATER CONTROLS
FOR ALL GASES

THE TITAN VALVE AND MANUFACTURING CO.
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Ride the OLD STOVE ROUND-UP to New SALES PEAKS

ROPER GAS RANGES PRESENT

A Smashing Promotion With NEW Ideas

AGGRESSIVE promotion is just as important today as it ever was. In spite of the fact that sales are good, you must promote to keep your name before the public — to tell about new gas range developments — to get your share of today's market — to stymie competition both present and future.

The new Roper Old Stove Round-Up sales plan is more complete, has more new ideas and more sales appeal than ever before. It will increase sales and profits for you.

Corral Customers With These Sales Helps

★★ Spectacular window displays
★★ Sparkling newspaper ads and mailing pieces
★★ Colorful banners and pennants
★★ Ideas and plans galore to make your ROUND-UP a smashing sensation.

Yippee! Here are a few of many exclusive features to help you rope in those old stoves—

Patented "Staggered Top"
"Glo" Broiler providing infra-red heat
"Peasant-Ware" grill with Serve Tray

GEO. D. ROPER CORPORATION

GENERAL SALES OFFICE AND PLANT: ROCKFORD, ILLINOIS

ROPER GAS RANGES FOR ALL TYPE GASES INCLUDING LIQUEFIED PETROLEUM GAS

Obituaries

William Austin Wood

William Austin Wood, former president of the Boston Consolidated Gas Co., Boston, Mass., and widely known consulting engineer, died May 19 after a long illness at the age of 88.

Mr. Wood, who retired in 1931 after 47 years of service with the gas company, was its president from 1916 to 1921 and its consulting engineer from 1921 until his retirement.

Mr. Wood received his A. B. degree from Syracuse University in 1875 and later a degree in Civil Engineering. Columbia University awarded him the degree of Master of Science in 1877.

He was a member of the New England Guild of Gas Managers, American Gas Association, New York Society of Gas Lighting, New England Gas Association, Boston Engineering Society and Phi Beta Kappa fraternity. He was the founder of the Engineers' Club of Boston and for many years served as secretary of the Class of 1875 of Syracuse University and the Boston alumni association of the university.

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Fletcher S. Pratt

Fletcher S. Pratt, 81, president of the State Fuel Supply Co., Oklahoma City, Okla., died June 8. Death was due to heart failure.

Mr. Pratt, a pioneer in the natural gas industry in Ohio, Kentucky, and West Virginia, was born on Dec. 31, 1859, in Buffalo, N. Y. He was manager of the Ohio Fuel Oil Co., in Charleston, W. Va., before he came to Oklahoma City. He assisted in the organization of the State Fuel Supply Co., was part owner, vice president, and general manager of that company. Since 1934 he has devoted full time to his work with the company. In October, 1939, he became president of that utility.

■ ■

Isaac T. Haddock

Isaac T. Haddock, prominent New England utilities executive, was drowned while on a fishing trip May 2. His body was recovered by fishermen on May 13. A resident of Tiverton, R. I., Mr. Haddock was a director of numerous utility companies in New England and at the time of his death was vice president of the Cambridge Gas Light Co., Cambridge, Mass., and the Worcester Gas Light Co., Worcester, Mass. He was active in the affairs of the New England Gas Association and served as president of that organization in 1932-1933. He was also a member of the American Gas Association, Society of Gas Lighting, Guild of Gas Managers of New England (former president), Engineers' Club and University Club of Boston.

Mr. Haddock was educated at the Massachusetts Institute of Technology where he specialized in chemistry. He entered the gas business in 1904 as chemist for the Cambridge Gas Light Co. and advanced to general superintendent in 1919 and vice president and general manager of the Worcester Gas Light Co. in May, 1929. He was appointed assistant general manager of the New England Gas and Electric Association in June, 1930, and was vice president of this Association from April, 1931, until his resignation in May, 1938.

■ ■

George J. Heckendorn

George J. Heckendorn, gas distribution engineer of Public Service Co. of Colorado, died June 1, 1941, following a three-day illness.

Mr. Heckendorn was born in Richland Center, Wis., on January 24, 1899. During World War I, he saw overseas service in Motorcycle Co. No. 322, A. E. F., from March, 1918, to August, 1919. He was graduated from the University of Colorado in 1923, with a degree of Bachelor of Science in Mechanical Engineering. Mr. Heckendorn joined Public Service Co. of Colorado in July, 1923, working since November, 1923, in the Gas Engineering Department.

■ ■

Walter G. Rich

Walter G. Rich, for 29 years manager of Southern Counties Gas Co.'s Whittier, Calif., district, died on April 20, of complications resulting from an emergency appendectomy.

Mr. Rich, a native of Salem, Mass., entered the service of Southern Counties Gas Co. on April 12, 1912. His previous experience in the gas business included several years with the former Los Angeles Gas and Electric Co., and a 10-months period with the Mexican National Gas Co. in Mexico City, where he installed the city's first gas plant, which manufactured the first gas ever made in the Republic of Mexico.

■ ■

A. P. Bartley

A. P. Bartley, who has been connected with the gas industry for more than a quarter of a century, died May 7. For many years he was Pacific Coast representative of eastern manufacturers of gas appliance equipment. Some of the firms he represented are: W. J. Schoenberger Co., Cleveland, Ohio; L. A. Young Spring & Wire Co., Oakland, Calif.; Central Screw Co., Chicago, Ill.; Wilcolator Co., Newark, N. J.; and the Mathews Manufacturing Co., Worcester, Mass. Mr. Bartley was well known in the gas industry of the Pacific Coast.

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Julius Bruder

Julius Bruder, superintendent of D. McDonald & Co. Works of American Meter Co., died in Albany, N. Y., April 17.

Mr. Bruder was 57 years old. He had been with American Meter Co. in Albany since January 26, 1903. He started as a draftsman and was progressively promoted until he became superintendent of the factory. He conducted this office with great ability for the past 20 years and contributed many improvements to gas meter manufacture.

■ ■

Charles H. Noack

Charles H. Noack, Tuolumne district manager of the Pacific Gas and Electric Co., San Francisco, died of a heart attack at his home in Sonora, Calif., on March 31. He was 63 years old.

Mr. Noack started work with the company in 1898, at the Brown's Valley power house near Marysville. He was stationed at Marysville, Nevada City, Sacramento, Visalia and Modesto before going to Sonora.

Digging long trenches, tearing up lawns, and breaking through concrete is the slow, expensive way to install pipe underground. With the Greenlee Hydraulic Pusher there's no digging of long open trenches, no pavement cutting, no tunneling, no backfilling, no repaving. Only a short trench need be dug to accommodate the pusher and pipe, and one or two men, pumping the handles, can easily develop hydraulic power to push pipe through the most difficult soil.

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Fast
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NEW
S-117 BULLETIN

The Greenlee No. 790 Pusher shown above pushing 3-inch pipe under U. S. Highway 51, has capacity for 1¼ to 4-inch pipe, while the No. 795 Pusher, with a 75-ton hydraulic unit, will handle large drainage ducts, concrete sewer pipe, and pipe beyond 4-inch. Both Greenlee Pushers are built compactly into one unit, and are easily carried to the job and set up. No extra equipment of any type neded . . . the powerful hydraulic units do the actual pushing. Write today for more information on how these pushers can save you money on every job.

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Preview of coming campaigns by

P·G·and E·

PACIFIC GAS AND ELECTRIC COMPANY

and the Gas Appliance Society of California

SUMMER GAS HEATING CAMPAIGN SHIFTS INTO HIGH

Advertising begun last month in newspapers is now to include 307 outdoor posterboards, 890 colorful, eye-catching truck banners, half a million colored stickers affixed to company bills, and an indeterminate number of spot radio announcements.

Experienced campaigners will recognize here virtually the same program which has put over the 10% summer discount campaign regularly every year, usually doubling the unit sales between June 1 and August 31.

They will find, too, the same cooperative advertising fund wherewith the P. G. and E. will pay 1/3 of dealers' advertising space costs.

G 207-741

DEALERS: By watching this page from month to month you can keep informed of sales promotional campaigns to be sponsored by the Pacific Gas and Electric Company and the Gas Appliance Society. Detailed information will be supplied, as usual, through the mail. If such information is not received, call our local office or write Gas Appliance Society, 1355 Market Street, San Francisco, California

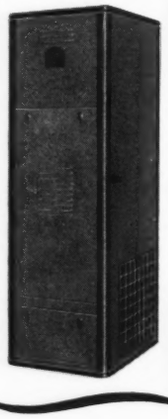
Experience
BUILDS PACIFIC HEATING
Quality
SELLS IT EVERYWHERE!

Quality makes—and keeps—gas users . . . satisfies more customers . . . sells more products.

That is why PACIFIC heating and ventilating equipment is built to only one standard of quality—the highest. In every type, size and model of PACIFIC equipment, this assurance of quality—of topmost efficiency—of low cost operation is a valuable asset that costs nothing extra, yet goes a long way toward building satisfaction and repeat sales.

PACIFIC has had 28 years of experience in the design and manufacture of heating equipment for residential, industrial and commercial use. This wide experience in solving all types of heating and ventilating problems has made PACIFIC an unquestioned leader in the gas appliance industry . . . insures in PACIFIC equipment the most advanced and completely engineered units available today.

Streamlining and beautifying home equipment has influenced today's methods of architectural treatment. Now—color, beauty, convenience, efficiency, economy and comfort are demanded. Illustrated here is a Forced-Air Furnace that successfully meets these demands in providing modern heating and ventilating requirements. Equipped with newest features, it is the symbol of quality and guaranteed satisfaction.



Write *today* and ask for details on how you can put this PACIFIC equipment to work building profits in *your* business.

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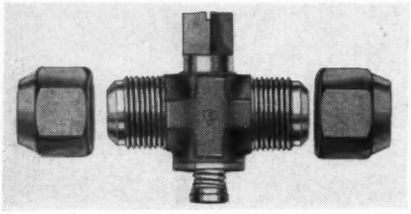


Shutoff Valve

The W. J. Schoenberger Co., Cleveland, Ohio.

Description: The valve illustrated herewith is a new product and is specially adapted for use as a low pressure shutoff valve in the line connecting the gas to the appliance. Other special valves and fittings are manufactured by this company for use with gas and liquefied petroleum gases. A special folder, devoted to fittings for the gas industry and covering a complete line of burner valves, offset fittings and other accessories, may be had upon request.

■ ■

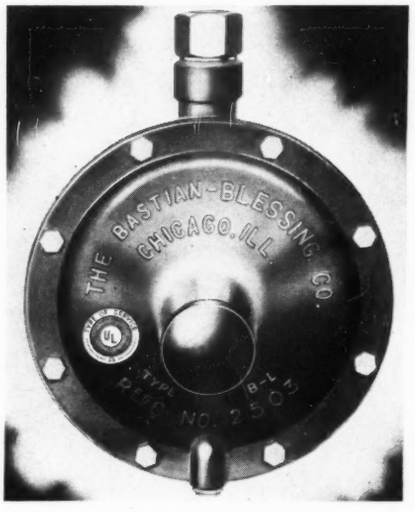
Vent Pipe

Condensation Engineering Corp., Chicago, Ill.

Model: Vitroliner.

Description: A heavy gage, welded seam Armco metal coated inside and out with a special high temperature acid resisting vitreous enamel. The pipe is made in stock sizes from 3 in. to 10 in. in diameter (round or oval except 3 in. and 4 in. sizes) of 6 in., 12 in., and 24 in. standard lengths; 22½°, 45°, and 90° elbows and open or closed tees with drain provision. Also oval to round union joints. Recommended by the National Board of Fire Underwriters. Serves the same purpose as a standard chimney. Pipe insulation is a high temperature asbestos insulation with a thickness of 1 in. The outer surface is coated with refractory cement. The insulation is made up in cylindrical seamless tubes for all straight lengths. All fittings are split longitudinally. One inch metal bands are provided to hold the insulation in place. Can be installed in exposed or concealed locations of new or old buildings. Conforms with section 1105 of the Building Code.

■ ■

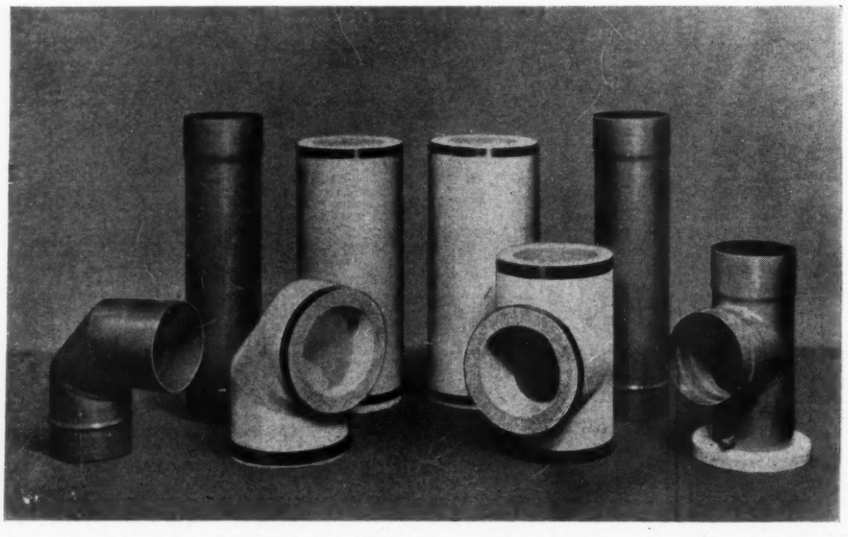


LP-Gas Regulator

Bastian-Blessing Co., Chicago, Ill.

Model: RegO No. 2503 LP-Gas Regulator.

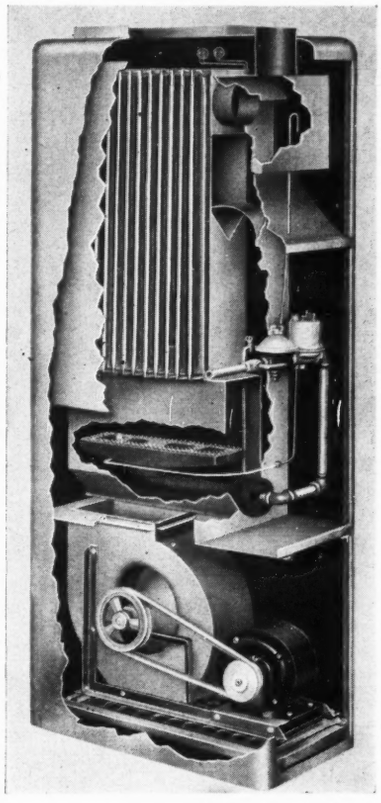
Description: The new regulator is designed primarily for heavy load conditions. It is an addition to the RegO line of regulators and does not replace any of the present types. A different design principle is embodied in this regulator so as to permit relatively large capacities without an appreciable increase in the size of the regulator. The effective diaphragm area and



Vitroliner with insulation before assembly.

lever ratio have been selected to give the best possible operation over the normal range of inlet pressure and load conditions. The regulator is equipped with a safety relief valve built in as an integral part of the main diaphragm.

■ ■



Furnace

Utility Fan Corp., Los Angeles, Calif.

Model: HC Closet Type Forced Air Furnace.

Description: Designed for most compact installation in closets, service porches, etc. Model HC, 65,000 B.t.u. input, is 14 in. by 26 in. by 61 in. high. The small size is achieved by uni-therm hollow-baffle heating element design. This hollow baffle absorbs a large quantity of heat from the center of the element, which also prevents critical temperatures in the element and consequent burnouts.

All Utility forced air furnaces have specially designed blowers that are extremely quiet and highly efficient. Every blower is dynamically balanced, and tested in accordance with the ASHVE code.

Utility forced air furnaces have Fibreglas dust-stop filters, port-drilled burners for any type of gas, built-in draft diverter and rigid, all-welded cabinet of heavy steel. Controls include automatic blower switch to start and stop air movement, temperature limit control, safety pilot, automatic solenoid valve controlled by pilot, thermostat and temperature limit switch, and gas pressure regulator.

Rated capacities of Utility closet furnaces are 65,000. 100,000, 130,000 and 150,000 B.t.u. input. The company manufactures a full line of heating equipment.

■ ■

Meter Co. Employs 40 Women

Pittsburgh Equitable Meter Co., Pittsburgh, Pa., employs 40 young women to cut, shape, gage and install the sheepskin diaphragms of gas meters, as well as soldering and fitting the many small metal parts of the diaphragms.

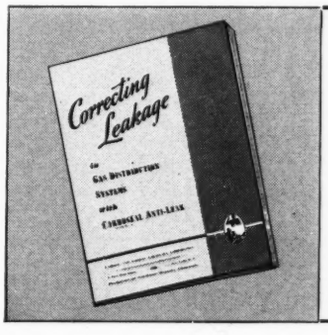
Proof that "Carboseal" Anti-Leak Works

...provides long-term, low-cost correction of leakage in Dry Bell-and-Spigot Joints

THE results tabulated at the right are typical of general field experience. They show why more than 265 gas properties are now using "Carboseal" anti-leak to correct packed bell-and-spigot joint leakage in systems distributing dry gas.

Joints treated with this scientifically developed liquid are tight and stay tight indefinitely. Joints treated eight years ago are still tight today on the soap test . . . And the cost is unbelievably low! The experience of 16 users who treated over 200 miles of main indicates that the average cost is about 50 cents per joint.

Diameter of Main—Inches	*Length of Main—Feet*	*Leakage Reduction—Per Cent*
8	620	100
4 and 6	404	72
4	273	60
6	582	95
6	92	100
4 and 6	257	85
4	1,200	100
3	637	63
6	1,600	86.2
3	606	95.3
3	618	100
4	303	95.5
8	713	85.5
4	1,700	91



It will pay you to investigate

You too can do what others have already accomplished with "Carboseal" anti-leak treatment. Plan now to start using this accepted method for reducing *your* unaccounted-for gas loss . . . This 20-page book tells more about "Carboseal" anti-leak treatment—how it can be applied by either the gravity or the hose method, how much it costs, and what results can be obtained. Write for a copy today, without obligation.

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Said the Pigmy to the Giant:

"Don't look down on me, Big Boy. It takes all kinds of folks to make a world."

Likewise it takes **all sizes** of pipe to make a **complete** line. Acipco not only furnishes the largest centrifugal Cast Iron Pipe in America (48"), but also is a pioneer developer and one of the industry's largest producers of Cast Iron Pipe in the smaller diameters (1½", 2" and up). Pipe 3" and larger are manufactured by the Mono-Cast Centrifugal Method. Complete line of fittings. For detailed literature address Acipco office nearest you.

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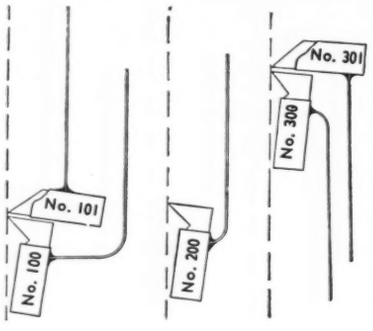

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Southern California Gas Co. To Build $750,000 Holder

WORK began June 20 on a new 10,000,000 cu. ft. capacity gas storage holder costing $750 000 to be erected by the Southern California Gas Co. on the site of the old briquet plant at Macy and Lyons streets, Los Angeles.

"In anticipation of heavy winter demands due to the influx of workers in local defense industries, the structure will be rushed to completion to provide additional reserves of natural gas for the Los Angeles area during the coming winter season," H. L. Masser, executive vice president of the gas company, declared.

Contract for the excavation and construction of a reinforced concrete and steel subsurface reservoir approximately 280 ft. in diameter by 40 ft. in depth has been awarded to the Ford J. Twaits Co., Los Angeles. Cost of this part of the work will amount to $198,600. The Twaits company expects to complete the reservoir, first of its kind to be constructed on the Pacific Coast, within 82 days, and work on the erection of the riveted steel storage tank, which will be placed over the reservoir, will be started immediately thereafter. The Koppers Co., Bartlett Hayward Division, Baltimore, Md., has been awarded the contract for the steel work at an estimated cost of $550,000.

Height of the completed storage holder will be 200 ft. It is estimated that 40,000 cu. yds. of excavation, 7,000 cu. yds. of reinforced concrete, 700 tons of reinforcing steel and five tons of copper sheeting will be required for the reservoir, which will contain the water that "seals" the gas in the holder. The holder itself will require some 2000 tons of steel.

■ ■

FPC Disallows Home Gas Co. Rate Increase

The Federal Power Commission announced June 14 its order and Opinion No. 62 disallowing proposed increased rates for natural gas sold by the Home Gas Co., Binghamton, N. Y., to five distributing companies in that state. The order and opinion followed a finding by the Commission that the company had not met the burden of proof in support of its contentions imposed upon it by the requirements of the Natural Gas Act.

Authority to receive revenue under the increased rate schedules was provisionally granted to the company by the Commission last January, subject to the filing of a $150,000 bond and pending final action by the Commission. The order announced today directs the company to refund the excess collected under the increased rates within 30 days, with interest thereon at 6%, and reinstates the lower rate schedules.

■ ■

Public Hearing Scheduled for Ray Phebus Application

The Federal Power Commission has set a public hearing for June 3 regarding the application of Ray Phebus, Centralia, Ill., for a certificate of public convenience and necessity to construct a natural gas pipe line from the Russellville field in Illinois to the Hoosier Gas Corp.'s line near Vincennes, Ind.

The gas is intended for resale in Vincennes, Washington and Princeton, Ind., and vicinity, according to the application filed on April 26, and would be purchased by the Hoosier Gas Corp. at rates which would effect a saving to consumers, the application states. The proposed line, extending a distance of eight miles, is estimated to cost approximately $50,000 and is proposed to be financed individually by the applicant. The line would be completed in 30 days.

■ ■

Natural Gas Is Introduced To Leesville, Louisiana

NATURAL gas was introduced to the city of Leesville, La., a short time ago by way of an impressive ceremony on the court house lawn, conducted by the officials of the town and of the United Gas Corp. of Shreveport which supplies the gas. During the ceremonies, which were held after dark, a gas pipe 40 ft. high was ignited by shooting roman candles at the gas pet cock located at the top of the pipe.

A 50-mile line from De Quincy to Leesville and Camp Polk was recently constructed in order to serve the two locations and also to provide additional capacity for serving the increasing demands of industries and towns.

The United Gas Corp., whose lines extend through five states, is supplied with gas through a 5000-mile interconnected pipe line system which taps hundreds of wells in the gas fields of the South and Southwest.

Any emergency industrial needs of the national defense program in the Leesville area will be served by the new line. Compressor stations are strategically located in order to push the gas along the lines in case of unusual demand. These stations are located at Iowa, La., and Magasco, Texas.

■ ■

El Paso Natural Increases Pipe Line Facilities

C. C. Cragin, vice president and general manager of the El Paso Natural Gas Co., El Paso, Texas, has announced that the company is now constructing two natural gas pipe lines. The two lines which will total 119 miles will cost $1,088,000.

One line, starting in Lea County, New Mexico, will terminate at El Paso, a distance of 68 miles. Estimated cost of this project is $680,000. The pipe, whose diameter is 16 in. is acetylene-welded and protected by Barrett enamel. Operating pressure of the line is 500 lbs., and the maximum capacity is 134,000 M c.f. Pipe was manufactured by the A. O. Smith Corp., El Paso.

The other line will extend from El Paso to Douglas, Ariz., a distance of 51 miles. Also acetylene-welded, the diameter of this line is 12¾ in. Operating pressure is 750 lbs. and maximum operating capacity is 78,000 M c.f. This project will cost approximately $408,000.

■ ■

Laclede Coke Contributes to National Defense

The Laclede Gas Light Co., St. Louis, Mo., as a contribution to the national defense program, has been called upon to provide coke for the operation of the blast furnace soon to be reopened at Granite City, Ill. Reopening of the pig iron plant recently purchased by the Koppers Co. of Pittsburgh, was formerly operated by the St. Louis Gas and Coke Corp. and will give this industrial area its only blast furnace.

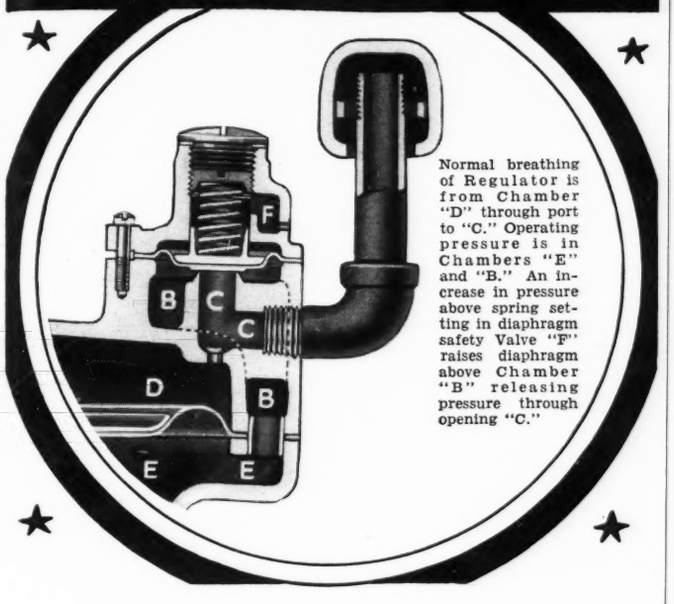
■ ■

Gas Struck on Ohio Farm

A gas well gaging a half-million cu. ft. was recently drilled by A. D. Townsend, Athens, Ohio, on the farm of Albert Hawk on Dutch Ridge in Lodi Township.

Gas was struck at 778 ft. It was turned in to the Ohio Fuel Gas Co. lines.

REYNOLDS Service REGULATORS WITH DIAPHRAGM OPERATED RELIEF VALVE!



Normal breathing of Regulator is from Chamber "D" through port to "C." Operating pressure is in Chambers "E" and "B." An increase in pressure above spring setting in diaphragm safety Valve "F" raises diaphragm above Chamber "B" releasing pressure through opening "C."

REYNOLDS Service Regulators in the Model 10 and 30 Series with Diaphragm operated Safety Valve offer a new high in performance. This Built-In Safety Valve used with the long removable spring insures extreme flexibility and remarkable accuracy. The extreme sensitiveness of this Safety Valve provides a positive release at any predetermined setting. It is not only positive on releasing but accurately and automatically reseals when normal pressure is restored. A wide range of features and combinations is available on either Models 10 or 30.

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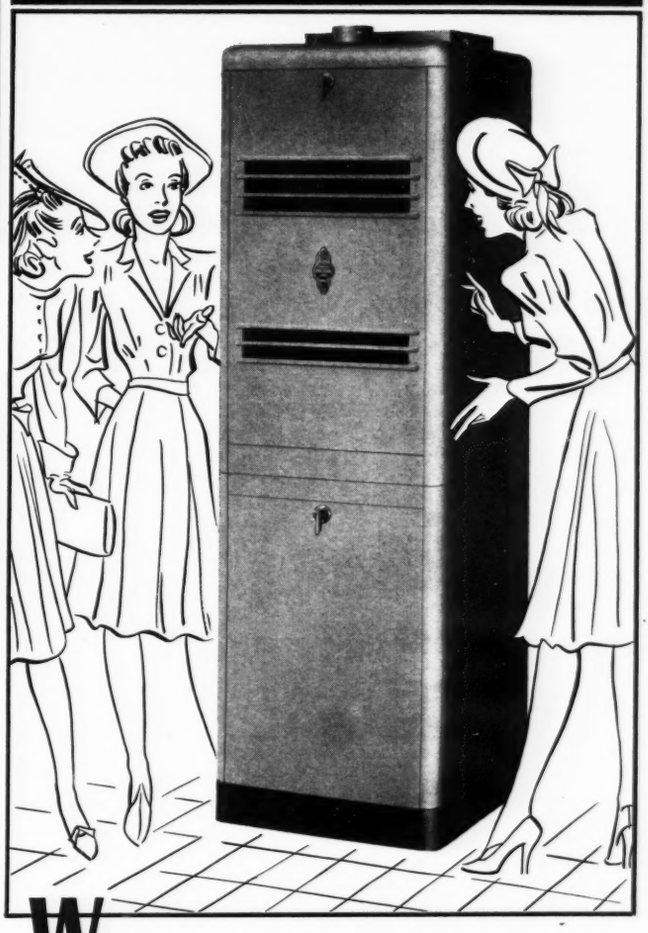

WOMEN "GO FOR" PAYNE'S STRATOLINER DESIGN

Of course, the engineering *inside* the furnace determines its performance . . . but try to interest the ladies in *that* if the cabinet isn't clean-lined, modern and attractive. ☆ That's why – besides PAYNE's famed emphasis on performance – every PAYNE unit also has plenty of eye-appeal. ☆ Penetrating tests in the PAYNE laboratory have proved every detail of design inside and out – from fire travel to baked enamel finish. ☆ When you recommend and sell PAYNEHEAT, your reputation is protected by the Nation's largest exclusive manufacturer of gas heating equipment.

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Illustrated: PAYNE Sentry Forced Air Unit. Also Floor Furnace, Gravity Furnace, Zoneair Unit, Duplex Furnace, Modern Console, Spacesaver Unit, Industrial Units and Accessories.

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CURRENT *Reading*

General

Electric Power Requirements and Supply—A report by the Federal Power Commission which shows the impact of the defense program on power systems and suggests orders for new capacity be placed to avert shortages in 1943. Copies of the report, which is the eighth in a series, and is designated as FPC P-7, are sold at 50c each by the Federal Power Commission only, to which all orders should be addressed.

The Place of the Petroleum Industry in the National Defense—A round-table discussion before the Annual Membership Dinner of the Kansas-Oklahoma Division of the Mid-Continent Oil & Gas Association held on January 11, 1941, in Tulsa, Okla. Published by the Mid-Continental Oil & Gas Association, Kansas-Oklahoma Division, 308 Tulsa Building, Tulsa, Okla. Compares conditions of the petroleum industry today with conditions during World War I. Brings out recent changes in warfare which affect the petroleum industry.

Man Meets Job — How Uncle Sam Helps — Pamphlet published by the Public Affairs Committee, 30 Rockefeller Plaza, N. Y. Written by Philip Broughton of the Social Security Board, the pamphlet tells why the U. S. Employment Service was formed, and how it functions in the present emergency. Specific instructions on how to apply or train for a defense job. Statistics on how many workers will be needed in different defense industries. It is the fifty-seventh of a series of factual 10c pamphlets which may be obtained from the Public Affairs Committee, 30 Rockefeller Plaza, N. Y.

Regulation Without Regimentation: The Oil Industry's Contribution to Our Economy—An address by Joseph E. Pogue, vice president of the Chase National Bank of the City of New York, delivered at the 1941 Annual Convention of the National Oil Scouts & Landmen's Association, May 30, 1941, in Dallas, Texas. Discusses conservation and regulation of the petroleum industry and relations of business and government in the industry.

Commodity Year Book—650 pages Annual Statistical and Research Compilation of Commodity Research Bureau, Inc. An exhaustive analysis of war-time commodity control features and special research studies is included. As usual, hundreds of up-to-date statistical tables and charts will depict probable raw material shortages and the likely cost of priorities and price controls in the various industries.

What American Women Want in Their Kitchens— Published by McCall Corporation, 230 Park Avenue, New York, N. Y. This 97-page book is based on the summary of the 3rd "Dream Room" Contest conducted by McCall's Magazine. The contest began in October, 1940, and closed December 31, 1940. Offering $1250 in prizes, the contest required entrants to plan an ideal kitchen including floor plan, color scheme, and all appliances. Over 4000 entries were received and the information they disclosed has been compiled and tabulated in this book. Of the entries, 85% were by home makers; 64% by married women. Large kitchens were specified by 47% of the contestants; 50% specified a medium sized kitchen and only 1½% specified a small kitchen.

Technical

East Alice Field Gas-Recycling Project Placed in Operation —N. Williams. *Oil and Gas Journal*, April 17, 1941, pp. 145, etc. In the East Alice field of Jim Wells County, Texas, W. R. Davis, Inc., recently placed in operation a 100,000,000-cu. ft. capacity plant for recycling gas from a 5,100-ft. sand. The recycling operations cover a unitized block of about 1600 acres, involving a total of 46 leases and royalty owners.

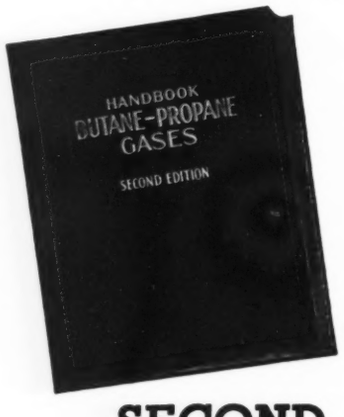
Gas Meters—By C. M. McCord, Memphis Light, Gas & Water Division, Memphis, Tenn. Booklet explains what a modern gas meter is and how and why it measures gas accurately. Hopes to convince gas users that they are not being cheated by an imperfect calculator. Copies may be secured from The Ambassador Co., Temple, Texas, at a small charge.

Cathodic Protection to Prevent Corrosion of Gas-Well Casing—W. E. Huddleston. *Oil and Gas Journal*, May 8, 1941, pp. 59, etc. In combating corrosion of gas-well casing experience indicates cathodic protection results in at least doubling useful life of the casing. The principle of cathodic protection and its application is discussed and factors entering into its successful operation are described.

Progress in Geodynamic Prospecting for Oil and Gas Fields— S. J. Pirson, *California Oil World*, May 2, 1941, p. 9. A new method of prospecting for oil and gas fields is proposed whereby the rate of leakage of hydrocarbon gases and vapors through the surface of the ground is measured. Results of surveys can be expressed by various units such as in cubic feet of gases per square mile per year, rate of pressure build-up or molecules of gas per unit area. Results of leakage measurements over the Music Mountain field of Northern Pennsylvania are presented.

Gas Measurement Balance in a Gas-Cycling Plant—D. A. Sillers. *Oil and Gas Journal*, May 1, 1941, pp. 29-32. At its cycling plant in Opelika field of eastern Texas, Lone Star Gas Co. has made a close study of measurements and as a result is obtaining measurements which are believed to be well within the limits of accuracy to be expected at low pressure. In this article methods are described.

HANDBOOK BUTANE-PROPANE GASES



415 Pages

CONTENTS: Semi-Bulk Distribution: Use of Butane in Buses: Combination Propane Operated Utility Plant: Use in Internal Combustion Engines: Design and Installation of Storage: Supply from Petroleum Refineries: Engineering Data on the Lower Olefins: Domestic Appliance Testing and Utilization: Economical Comparisons with Coal, Oil, Electricty, Producer Gas, Manufactured Gas: Town Plants: Manufacture from Natural Gas: Special Uses: Volume Correction Factors: Transportation: Use with Other Gases: Analysis and Testing: Properties of Mixtures: Bottled Gas Distribution: Bibliography: Central Plant Directory: Catalog Section.

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The Natural Gas Magazine

BUTANE-PROPANE
News
1709 W. 8th Street
Los Angeles, Calif.

Dehydration Units for Individual Gas Wells—R. B. Anderson. *Oil Weekly*, May 5, 1941, pp. 17-19. Rock pressures in excess of 1000 lbs. in West Virginia have permitted the operation of field lines at pressures of 500 to 600 lbs., which have introduced the problem of hydrate formation at temperatures as high as 55° F. This paper describes small volume, automatic natural-gas-dehydration units designed for treating natural gas at individual wells to solve this problem. An A. P. I. paper.

Dehydration of Natural Gas and Absorption Oil—C. S. Worley and D. E. Foster. *Petroleum Engineer*, May, 1941, pp. 46-51. Diethylene-Glycol plant extracts water from natural gas—gas bubbled through hot lean oil reduces water content of absorption medium.

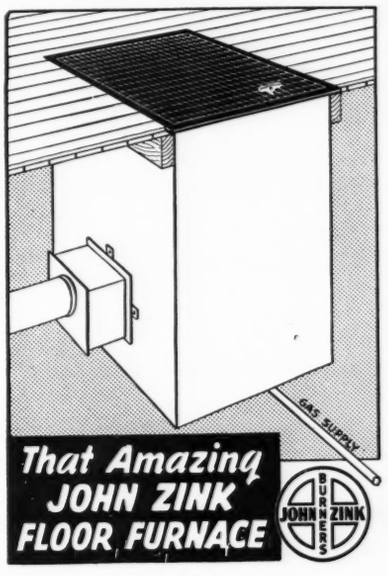
Hydrogenation and Liquefaction of Coal, Part I—By H. H. Storch, L. L. Hirst, C. H. Fisher, and G. C. Sprunk. Bureau of Mines Technical Paper 622; obtainable from Superintendent of Documents, Washington, D. C.; 20 cents. Hydrogenation processes which, if applied to total U. S. coal reserves could yield enough oil for 3000 years, are described in this new report of research at the Bureau's Pittsburgh laboratory. Detailed results of experiments on 13 different coals from four regions of the U. S. are included, together with complete descriptions of the plant, drawings, illustrations, charts, tables, diagrams, and photographs.

Summary of Operations: California Oil Fields—Quarterly Chapter, 24th Annual Report of the State Oil and Gas Supervisor issued by the Department of Natural Resources Division of Oil and Gas. Contains outline maps showing location of oil fields and special articles with reports on the Mesa oil field, the Capitan oil field, and the Santa Maria Valley oil field. Also contains a directory of California Oil Operators. Compiled by engineers of the Division of Oil and Gas.

Natural Gas Hydrates—W. I. Wilcox, D. B. Carson, and D. L. Katz. *Industrial and Engineering Chemistry*, May, 1941, pp. 662-665. Natural gases under pressure have been known to form crystalline hydrates with water. This paper gives data on the temperatures and pressures, up to 4000 lbs. per sq. in., at which three natural gases form hydrates. The phase data on hydrates of pure hydrocarbons were enlarged by the equilibrium temperatures and pressures for the hydrate formation from compressed liquid propane. The concept was introduced of handling vapor-solid equilibria in the same manner as the vapor-liquid equilibria data have been used to predict the phase relations of fluid hydrocarbon systems.

Power Alcohol, History and Analysis—58 pages; paper; published by American Petroleum Institute Committee on Motor Fuels, 600 S. Michigan Ave., Chicago, Ill. Helpfully comprehensive, non-technical treatise on the 30-year-old scheme for encouraging or compelling motorists to utilize as fuel gasoline blended with alcohol made from farm products. Concludes that 30 years have proved the plan impracticable, with the few technical advantages failing to offset economic disadvantages, and with the supposedly-benefited farmer certain to lose.

Fighting Fires With Carbon Dioxide Extinguishers—P. W. Eberhardt. *Oil and Gas Journal*, May 29, 1941, pp. 48-50. Carbon dioxide is one of the fastest extinguishing agents employed to combat fires in burning liquids or gases. In this article the various types of carbon dioxide extinguishers available, including portable, wheel-mounted and built-in systems, are discussed.



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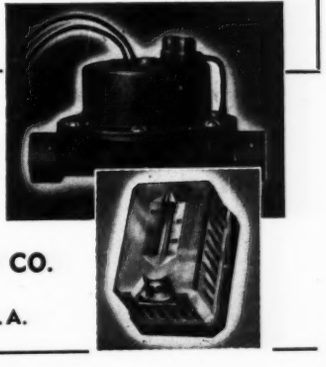

No humming, no chattering, no sticking with Klixon electric gas valves. For these valves are thermally operated—by a calibrated thermostatic disc. Solenoids are out. No parts to cause trouble or noise.
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Connelly Photo Contest Extended

THE Connelly Iron Sponge & Governor Co., Chicago, manufacturers of gas purifying materials, and apparatus for the control, distribution, and testing of gas, natural and manufactured, has just announced that the Photographic Contest originally scheduled to end June 30, will be extended to August 31. The purpose in granting this extension is to give an opportunity to many who have signified their desire of entering the contest to take suitable photographs.

It will be remembered that the Connelly Photographic Contest which started April 1, is open only to employees of gas companies and their families. Seventeen cash prizes totaling $225 are offered for photographs which the judges decide are the best of all submitted regardless of classification.

The company states that any photograph of real pictorial merit taken in or around gas plants will be eligible for this award. It is not necessary for Connelly purifying materials and apparatus to be visible in the pictures submitted for this prize. The sponsors' primary purpose is to encourage the fascinating and stimulating sport of amateur photography among gas company employees all over the country.

Judges for the contest are: Vernon G. Leach, chief combustion engineer, Peabody Coal Co., Chicago, Ill; Lester Eck, general superintendent, Minneapolis Gas Light Co., Minneapolis, Minn., and Samuel Insull, Jr., W. A. Alexander Co., Chicago, Ill.

It is very easy for all persons interested in photography to enter the contest. An entry blank may be secured from any gas superintendent or a letter to R. W. Stafford, contest manager, at the Connelly Iron Sponge & Governor Co., 3154 South California Ave., Chicago, Ill., will bring one by return mail.

■ ■

11,000,000 cu. ft. Gas Well Drilled in Zanesville, Ohio

The Industrial Gas Corp., Newark, Ohio, formerly the Newark Consumers Gas Co., has announced that its drilling division has brought in an 11,000,000 cu. ft. natural gas well near Zanesville, Ohio.

The well, one of the largest producers in this district, was drilled in the Clinton sand. Gas was reached at 4200 ft.

Defense Program Calls For Mineral Economists

MINERAL resources are of great importance to National Defense. The government is looking for persons especially qualified in the economic aspects of the mineral industries to do professional research in the fields of minerals, coal, and petroleum. Civil service examinations for these positions are now open. The salaries range from $2,600 to $5,600 a year.

Completion of a four-year college course with major study in such subjects as geology, metallurgy, mining engineering, economics, or political science, is required. However, persons who have had only two years of the college study may substitute two years of experience dealing with economic aspects of the mineral industries. Some of the experience must have been in research in either metallic minerals, non-metallic minerals, secondary metallic minerals, coal, petroleum, or general mineral economics. Further information may be obtained from any first or second-class post office or from the Civil Service Commission, Washington, D. C.

■ ■

4750 Pittsburgh Defense Homes Heated by Gas

Three gas companies in Pittsburgh, Pa., will install gas for heating in 4750 defense housing units currently under construction in Allegheny County, reports H. C. Givan, Jr., supervisor of trade developments, Equitable Gas Co., Pittsburgh.

Decision came to allot the projects to Equitable Gas Co., Manufacturers Light & Heat Co., and Peoples Natural Gas Co. when government authorities decided relative costs for gas would run less than with coal. Of 12 projects allotted in this territory, 10 housing projects will use gas.

Work on the majority of units will end about September 1. Future tenants will pay for their heat, light and gas on a fixed basis with all utilities for each project supplied by central units.

■ ■

Brownsville, Texas, Annual Gas Bill Is Reduced $8520

Following a conference of the Brownsville, Texas, city commission and the Rio Grande Valley Gas Co., the city of Brownsville will pay $8520 less annually for natural gas in the future. This decision was reached at a recent meeting of the city commission before which J. C. Jordan, vice president of the Rio Grande Valley Gas Co., appeared.

Although the present contract will not expire until November, the gas company agreed to terminate it at once and allow the new lower rate structure, a sliding scale, to become effective immediately. This will allow a saving of $4260 for the rest of the year. The new contract is for a period of three years, beginning May 26, 1941.

■ ■

Pacific Gas and Electric Co. Issues New Stock

Pacific Gas and Electric Co., San Francisco, plans to issue and sell directly to the public 400,000 shares of new 5% first preferred stock bearing a total par value of $10,000,000. Proceeds from the sale will be used to supplement the company's present cash balance in order to provide additional capital for its large construction program. The company is also preparing to retire on December 1 its maturing issue of $20,000,000 of first and refunding mortgage series B bonds.

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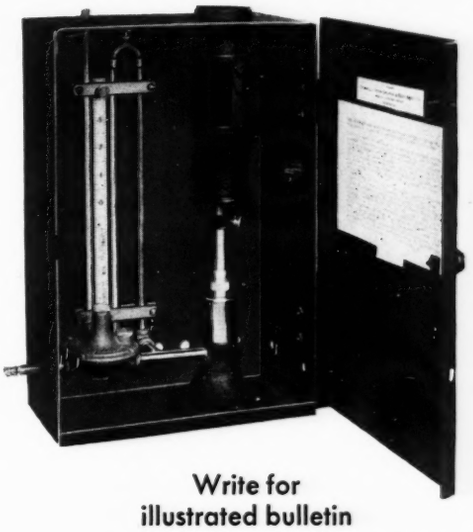

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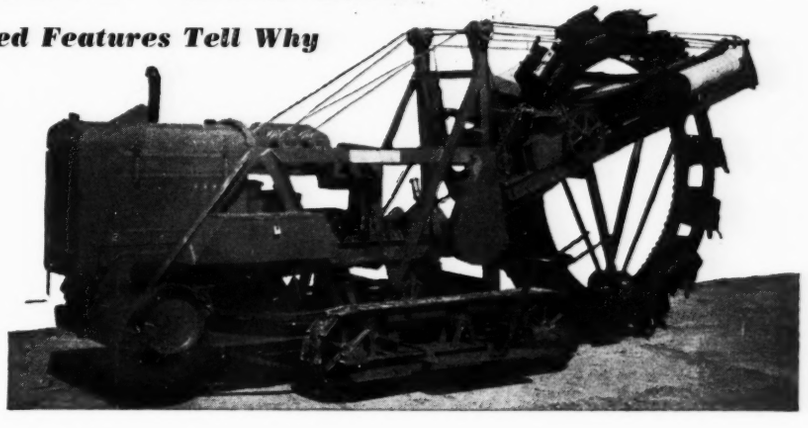

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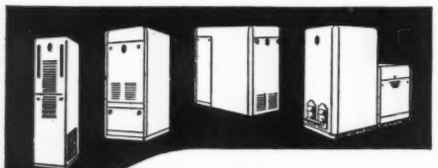

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Schedule of Increased Rates Filed by Pittsburgh Company

THE Manufacturers Light and Heat Co., Pittsburgh, Pa., has filed with the Pennsylvania Public Utility Commission, in Harrisburg, a new schedule of gas rates which will go into effect July 2, 1941. These new rates—which represent increases for smaller consumptions, and decreases for larger consumptions—are necessary to offset increases in the cost of gas and gas service, increased wages and higher costs of materials, and taxes which have mounted rapidly in recent years.

These unavoidable increases in the cost of doing business have reduced the earnings of the company to a point far below what is considered, according to past rulings of the Utility Commission, to be fair and equitable.

The new rates, after deductions, for prompt payment are as follows:

First 400 cu. ft. or less per month	$1.00
Next 600 cu. ft. (per 100 c.f.)	.07
Next 4000 cu. ft. (per M c.f.)	.65
Next 5000 cu. ft. (per M c.f.)	.60
All over 10,000 cu. ft. (per M c.f.)	.40

These new rates compare with present charges of $1.00 for the first 1600 cu. ft. or less per month, 60 cents per thousand up to 15,000 cu. ft. per month, 45 cents per thousand for the next 85,000 cu. ft., and 42 cents per thousand from 100,000 cu. ft. up.

The increase for Manufacturers is identical with that put into effect by The Peoples Natural Gas Co. last summer and it is expected that Pittsburgh's other gas company, The Equitable Gas Co., will also soon file a new increase schedule.

■ ■

Minn. Valley Canning Co. Installs New Gas Burners

Natural gas conversion burners were turned on and lighted at the Montgomery, Minn., plant of the Minnesota Valley Canning Co. for the first time recently.

The two huge boilers of the canning company, formerly heated by coal, had been equipped with gas burning installations under the direction of Frank J. Merrick, chief engineer of the company at Le Sueur, and Ralph Kendall, engineer of the Montgomery plant.

D. R. Reimers, chief engineer of the Minnesota Valley Natural Gas Co., and Everett Loney, local representative, adjusted the valves, turned on the gas and applied a kerosene torch to the pilot lights—and the gas was on.

The two conversion burners will generate between 50,000 and 60,000 lbs. of live steam per hour. They will furnish all the steam necessary to process, cook, and can the entire pack at this plant.

■ ■

Philadelphia Electric Co. To Rebuild Coke Plant

Industrial use of gas in the area adjacent to Philadelphia has increased over 50% in the last four months, causing the Philadelphia Electric Co. to place orders for the immediate rebuilding of its idle coke plant at Chester, Pa.

The cost of the improvement will approach $1,000,000 and the new plant will be in production in less than a year. Orders have been placed for 21 coke ovens which will produce 10,000,000 cu. ft. of gas per day.

To enlarge the present plant, and have room available for a future storage tank, the property of the Delaware River Steel Co., adjacent to the present gas plant, has been purchased. This includes a steel blast furnace which has been idle and unused for 11 years. Government defense officials believe that the furnace, if leased or sold by the Philadelphia Electric Co., can be put into production quickly and produce 300 tons of pig iron a day.

■ ■

American Gas Association Offers Safety Certificate

ON THE recommendation of the Accident Prevention Committee, the executive board of the American Gas Association has made provision for the issuance of a Merit Award Certificate for any member gas company or division thereof which has completed one million or more consecutive man-hours without a disabling injury accident.

The Accident Prevention Committee has prepared an attractive Award Certificate, together with rules and regulations for this merit award, which will be available equally to small or large companies, or divisions thereof. The award certificates will be presented by the president of the Association to the presidents of the winning companies at the annual convention of the Association. Further information may be received by addressing the Accident Prevention Committee, Association headquarters.

■ ■

Sub-Holding Company Is Dissolved by Utility Act

The North American Light and Power Co., a principal sub-holding company in the $1,000,000,000 North American Co. system, is to be dissolved in compliance with the simplification and integration provisions of the Public Utility Holding Company Act, it was announced recently.

The principal operating properties controlled by North American Light and Power are: The Northern Natural Gas Co., principally a natural gas pipe line operating from Texas to Minnesota; the Kansas Power and Light Co.; the Missouri Power and Light Co., and the Illinois-Iowa Power and Light Co., operator of electric and gas properties in central Illinois and controlling company for the Des Moines Electric Light Co., the Iowa Power and Light Co., the Illinois Terminal Railroad Co. and Central Terminal Co.

■ ■

Gas Producing Plant Contract Goes to Koppers Company

The Aluminum Co. of America plans the erection of a gas-producer plant with fuel and ash-handling equipment at its new aluminum plant currently going up at Alcoa, Tenn.

The Engineering and Construction Division of Koppers Co., Pittsburgh, has a contract to design and construct three producers, each 10 ft. in diameter, making high and low-pressure steam and using coke for producer fuel. The plant will have a production capacity of about 18 000,000 cu. ft. of producer gas daily, and will distribute gas at three pounds pressure from the producer plant throughout the aluminum plant.

■ ■

Chattanooga Gas Co. Buys Building for $60,000

The Chattanooga Gas Co., Chattanooga, Tenn., recently purchased the two-story, brick building at 811 Broad Street which the company has occupied under a lease for nearly 30 years. Sixty thousand dollars was paid.

A. J. Goss, vice president and general manager of the company, announced that the interior of the building will be remodeled and an air conditioning plant will be installed.

Richmond, Ind., May Get Natural Gas From Texas

THE Richmond Gas Corp., Richmond, Ind., which recently acquired the Richmond plant of the Indiana Gas Utilities Co., has asked the city council to approve the substitution of natural for manufactured gas in Richmond.

The action was preliminary to the filing of a petition with the Indiana Public Service Commission asking approval of a rate schedule.

The company informed the council that under the new rate structure 4165 residential customers would pay $27,035 less annually than they paid for the same amount of manufactured gas and that 2046 customers would pay $3109 more.

The total annual saving, the company said, would be more than $23,000 for the 6211 residential customers involved. Savings also will accrue to commercial and industrial consumers.

The natural gas will come from the Texas fields, with supplementary service if needed, from the West Virginia fields. The company said the manufactured gas plant would be rebuilt for standby purposes.

■ ■

McCook, Neb., to Get Gas From Southern Kansas Area

The Aksarben Natural Gas Co., McCook, Neb., will soon receive gas from the Hugoton field in Southwestern Kansas through a pipe line which is now being laid from Scott City, Kan., by the Kansas-Nebraska Natural Gas Co., Blackwell, Okla.

The new line is being laid as a result of the merger on April 17 which linked the Kansas Pipe Line and Gas Co. with the Nebraska Natural Gas Co., to form the new Kansas-Nebraska Natural Gas Co. The Aksarben Co., as a distributing agent with central offies in McCook, will be the first Nebraska distributor to be linked with the Hugoton field through the facilities offered by the new line.

Reece McGee, contractor in charge of the project, said that the pipe line which was started on May 1 will take approximately four months to complete. A 900-hp. compressor is now being built at Scott City.

■ ■

Record Size Gas Holder Erected in Sioux City

A bullet type gas holder, said to be the largest of its kind in the United States, has been completed for the Sioux City Gas and Electric Co., Sioux City, Iowa, by the Stacy Bros. Gas Construction Co. of Cincinnati.

Construction of this additional holder was made necessary by increasing use of gas, especially for house heating, according to G. A. Neal, president of the Sioux City Gas and Electric Co. The new reservoir is built of welded steel plates, is 100 ft. high and has a capacity of 400,000 cu. ft. of gas at 40 lbs. presssure. The new tank, together with compressor unit and auxiliary equipment, cost approximately $55,000, Mr. Neal said.

■ ■

Community Natural Gas Co. Gets 20-Year Franchise

The Community Natural Gas Co., Ennis, Texas, has agreed with the City Commission to pay a total of $24 000 for the granting of a 20-year franchise to be given by the City of Ennis.

Chester May, president of the Community Natural Gas Co., and local manager L. D. Black, presented the company's offer to the commission at a meeting held recently.

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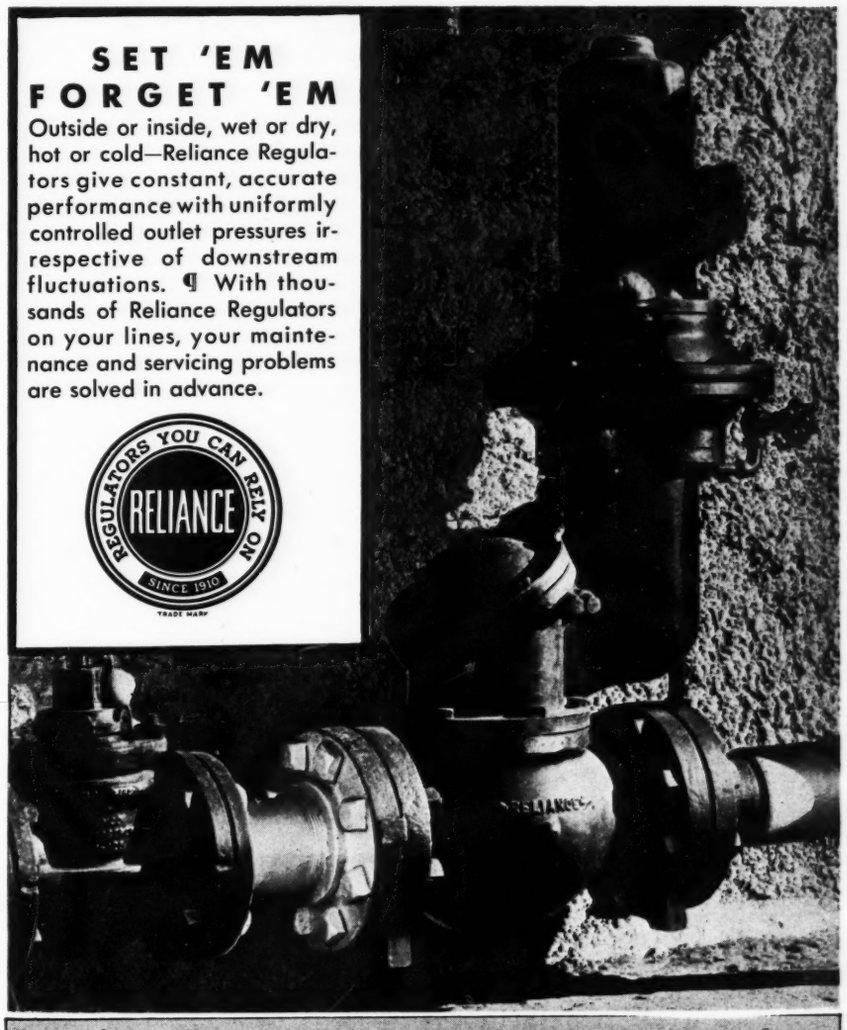

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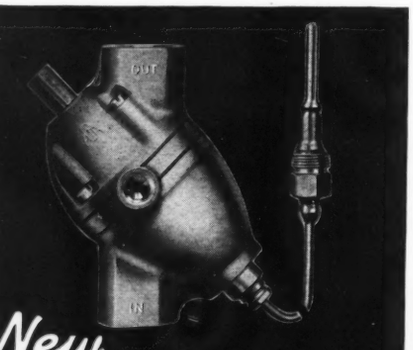

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Laclede Veterans Club Holds First Dinner Meeting

THE first dinner meeting of the newly-organized Laclede Gas and Electric Veterans Club was held at the Hotel York April 12, with 77 active and seven retired members present, representing 2667 years of service with the Laclede Gas Light Co., St. Louis, Mo. Charles Longman was the employee present who has had the longest continuous service record, having completed 49 years.

Qualification for membership in the club is 25 years of service with either or both companies, continuous or accumulative; also any retired employee who had 25 years of service upon retirement is eligible. The club is a voluntary organization and is not sponsored by the company. Its purpose is for the men who have been employed a long time at Laclede to get together at least twice a year and renew old friendships.

Officers of the Veterans Club are: Charles H. Wiley, president; Jack E. Hallett, vice president; and John J. Barada, secretary and treasurer. The five men elected to the Executive Committee were: J. J. Clancy, J. A. Chott, J. H. Doerres, F. A. Horr, and H. M. Gerkin.

■ ■

Arkansas Louisiana Gas Co. Buys Camden Co. Properties

Approval of the sale of the Camden (Ark.) Gas Corp. properties to the Arkansas-Louisiana Gas Co., Little Rock, was made by the State Department of Public Utilities following advice from the Camden city council that it "had no objections" to the transfer.

The Arkansas-Louisiana firm proposes to purchase the Camden properties for $226,000, reduce commercial and domestic rates by approximately $7400 annually, and add any facilities sought by new industries seeking to locate in Camden.

■ ■

Large Oil Leases Secured In Solano County, Calif.

Several of the major Californa oil companies are busy securing leases in the prospective gas fields of northern Solano county. The Texas Co. has completed the negotiation of leases on 3435 acres in the vicinity of Birds Landing, about five miles northwest of Antioch. Standard Oil Co. is also reported to have recently leased large acreage in the same area and near Grizzly Island. Approximately 75,000 acres of prospective oil and gas lands are reported under lease to major oil companies, including Standard, Shell, Richfield, Texas and Amerada.

■ ■

Early Gas Pipe Line Given Dallas Historical Group

TAKEN from a gas pipe line which formed part of the gas distribution facilities in Dallas, Texas, only a few years after the civil war, a piece of pine, six inches square and with a 3-in. round hole bored lengthwise through it, has been presented to the Dallas Historical Society by R. G. Soper, Dallas Gas Co. president. The piece of wooden pipe was found a few years ago by gas company workmen who were installing mains in downtown Dallas. The wooden line, it is believed, was laid about 1874.

In the old wood lines joints were made by hollowing out the end of one pipe section so that the tapered end of the next section could be fitted into it. It was not necessary to have joints absolutely gas-tight because the manufactured gas in use at that time was distributed under low pressure, and contained a tarry substance which would soon seal any small leak in a joint. This same tarry substance made it necessary to install drip buckets at intervals on the lines to prevent clogging of the pipes. The gas at that time was used almost exclusively for illumination.

■ ■

Four Rochester, Minn., Grade Schools to Use Natural Gas

The board of education of the Rochester, Minn., city schools recently decided that natural gas equipment will be installed in four public grade schools in that city for heating purposes. This equipment will be installed for a year's survey in the Holmes, Edison, Northrop, and Lincoln schools.

At the close of the year a tabulation will be made to determine the saving in heating costs before the use of gas will be continued. Belief was expressed that the use of gas would enable custodians to give more time to the care of buildings by reducing the time necessary for the care of furnaces.

The Minnesota Northern Natural Gas Co. will furnish the gas.

■ ■

Safety Measure Installed In Los Angeles Schools

Every school building in Los Angeles is now protected against gas explosions that might occur from bombing, sabotage, earthquake or other shocks, since The Security Valve Co., Los Angeles, has completed the installation of shock-operated gas shut-off valves. All of the valves have diaphragm control, to close the gas supply whenever pressure passes predetermined high or low levels. Los Angeles is the first large city in the United States to complete this program of school protection.

■ ■

Duke Manufacturing Co. Opens New Offices

The Duke Manufacturing Co., St. Louis, Mo., will open its new manufacturing plant including its offices and salesrooms on July 8 at 2305 North Broadway, St. Louis. A housewarming for jobbers and manufacturers will take place at that time.

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